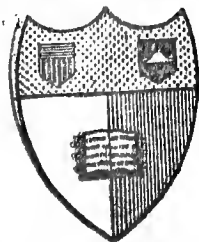


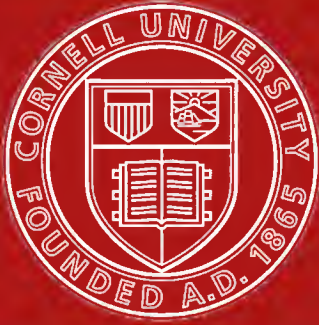




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**Report of Committee on**  
**Municipal Improvements**  
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# REPORT

MADE TO THE

# BOSTON SOCIETY OF ARCHITECTS

BY ITS COMMITTEE ON

## MUNICIPAL IMPROVEMENT

This pamphlet is printed at the joint expense of

THE BOSTON SOCIETY OF ARCHITECTS.      THE METROPOLITAN IMPROVEMENT LEAGUE.  
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THE BOSTON REAL ESTATE EXCHANGE.      THE BOSTON MERCHANTS' ASSOCIATION.  
THE BOSTON BOARD OF FIRE UNDERWRITERS.  
THE MASTER BUILDERS' ASSOCIATION OF BOSTON.

THE suggestions offered herein are not endorsed, approved, or urged by the Boston Society of Architects or by any of the other associations who have joined in the expense of publishing this pamphlet. It is printed as an interesting study of subjects of public concern and in the hope that it may lead to fuller investigation by competent authorities into the subject of the municipal development of Boston.

ALFRED MUDGE & SON INC. PRINTERS  
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1907

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# REPORT.

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TO THE BOSTON SOCIETY OF ARCHITECTS :

You have asked us as a committee to collect and study any plans that we can find for making Boston now, and as it grows larger, more convenient for its inhabitants, better adapted for commerce, and more beautiful in appearance. We have held many meetings and collected from many sources suggestions for varied improvements. We have progressed to a point where we are convinced that this work is important, and we are sure that it could be to advantage placed in the hands of a body appointed by public authority and clothed with more power and influence than is possessed by a committee of our or of any society.

Nature blessed Boston with a beautiful site. Our forefathers handed on to us an old-fashioned English city that was prosperous and convenient and of great beauty. Is it a better city in our hands, and are we preparing properly for its future? Old Boston is full of local charm that we all want to preserve, but how is it with the New Boston? These are the questions we have had to consider.

It is easy to point out fatal errors that have been committed when, in recent years, large municipal works were in progress. They arose because of the lack of such forethought as we are now urging. When a court house was built on Beacon Hill, and a city hall was proposed between it and the State House, an opportunity was lost that has rarely been presented to any city. If Beacon Hill had thus been crowned by these three important public buildings, the city would have been dominated by a worthy Acropolis. The Common would have formed a park-like approach to them, and we should have had a dignified municipal centre. Again, we have lately built great railway stations at the north and south ends of the city. The stranger emerging from these, instead of being greeted by grand or stately effects, in one case is puzzled to find his way beneath the intricacies of an elevated railway, and in the other finds himself in an ill-arranged and unsightly quarter. We surround Copley Square with costly buildings, and as we cannot agree how to treat the square itself, we leave it unarranged and half finished. Commonwealth Avenue, which is a fine street for any city, is lost in a gravel waste at the "Cross Roads." Our parks are defaced by a fringe of cheap tenements, when we might have preserved them by restrictions on the lands that border them. They and our streets are defaced by advertising signs, although by taxing these we might control them or at least make them add to our revenue. Our harbor islands were once wooded, but now are bare. The waters of our harbor are defiled with sewage, and the fresh sea air is made noxious by the rendering plants on its islands. A girdle of dangerous and inflammable wooden tenements surrounds the city. Our streets resound with a deafening noise, and over the whole town hangs an unnecessary cloud of soft coal smoke.

Nobody will say that these statements are exaggerated or deny that in such matters we stop short of the better Boston we all long for and short of getting full value for our large expenditure. We can justly be proud of our parks, our library, our hospitals. A fine bridge across

the Charles is nearly completed, and the Charles River Basin is about to be beautified ; but obviously we have at times made grave mistakes, and it is clear that it is wise to look to the future and thus guard against errors and provide for possible improvements.

Nor need we think that in studying these subjects we are pioneers. On the contrary, we lag behind many foreign and American cities. European cities rival one another in providing the latest and most modern facilities to attract commerce. Here in America we have been living on our surplus. We have not hitherto economized and made the most of our advantages. European seaports, on the other hand, like Bremen, Hamburg, Copenhagen and Antwerp, find that their prosperity and almost their existence depend on keeping abreast with modern methods. Taking a railroad train as the modern factor instead of a cart or a barge, they have lined their shores with mile-long piers and fitted these in turn with vast warehouses and travelling cranes and electric trolleys to make the distribution of goods easy and cheap. London is the greatest port in the world. Liverpool has spent \$150,000,000 on her docks and is growing faster than London. Now London has new dock work under way to cost \$20,000,000 and provide accommodations for steamers of 850 feet in length. Quebec is studying an important dock scheme to receive the shipping that is deserting the low water at Montreal. Indeed, Montreal, in self defence, has even considered a dam and locks on the St. Lawrence River itself. Our turn has now come, if we would increase our commerce.

It may before long be profitable to develop our inland waters as Germany has done. It is conceivable that as our conditions approach those of older countries the old schemes for linking Boston by waterways to the Connecticut and the Hudson may be again considered, and the carrying of coal in sea-going barges by the Merrimac to Lowell, or from Taunton by the way of Brockton to Fore River, may become a practical question. We review how this question has been met here in former times and abroad to-day.

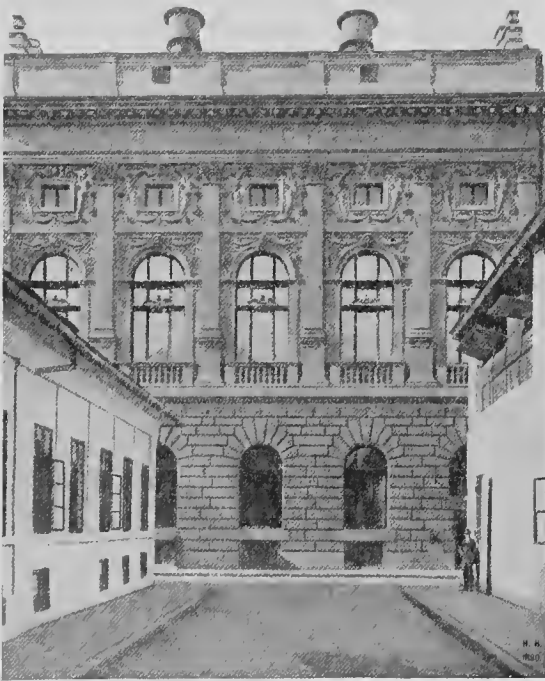
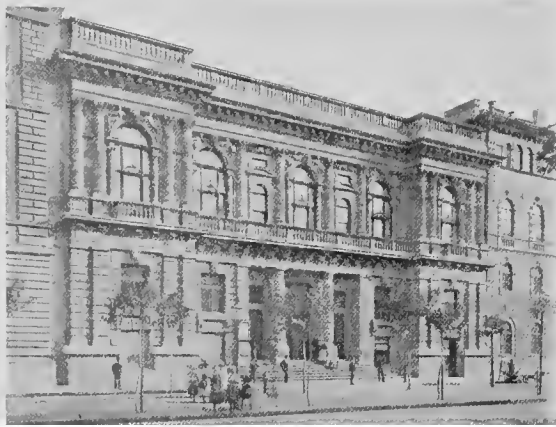
But if schemes like waterways seem to give such slight margins for profit as to be unnecessary for the present it still remains clear that Boston needs some awakening. If we see no immediate prospect of a railroad to the West run in Boston's interest, possibly we can make the port enticing to those that do run here. Our farmers are aware that successful agriculture demands the most modern machinery. Our mills and machine shops replace their machinery with modern types. Boston is pre-eminently a port, and her prosperity must rise or wane not only as she breeds strong men or maintains lines of communication with the interior but also as she offers facilities for ocean commerce. Perhaps the suggestions that are made in our report for developing the maritime advantages of the port may at least tend to bring the subject before the public.

In the matter of convenient communication, the subway, the elevated road, and a few but generally rather crude new streets, have done something for Boston. The new law, which permits larger takings when a street is projected, promises well for any future streets of importance. The building of convenient streets through the old city is, however, attended with great expense, and can be done but rarely. But all around the old city a new one is fast arising, and the schemes of intercommunication between the suburbs and from the suburbs to the centres should not be left to scattered suburban governments nor to transportation companies. They should be carefully and patiently thought out by some central authority and gradually constructed according to a settled general scheme. We have been reluctant to urge any radical changes in the old city, partly because of their cost and partly because the same outlay will do vastly more in the newer portions of Boston. We have outlined a few desirable improvements and especially an encircling boulevard to connect outlying suburbs and to cross the arteries that radiate from the main city centres.

Our city parks, which give us a reputation for a love of the beautiful, are now nearly a generation old, and the metropolitan parks were started thirteen years ago. Of endeavors to make the city beautiful in any large way by well-ordered streets and avenues or the creation of monu-



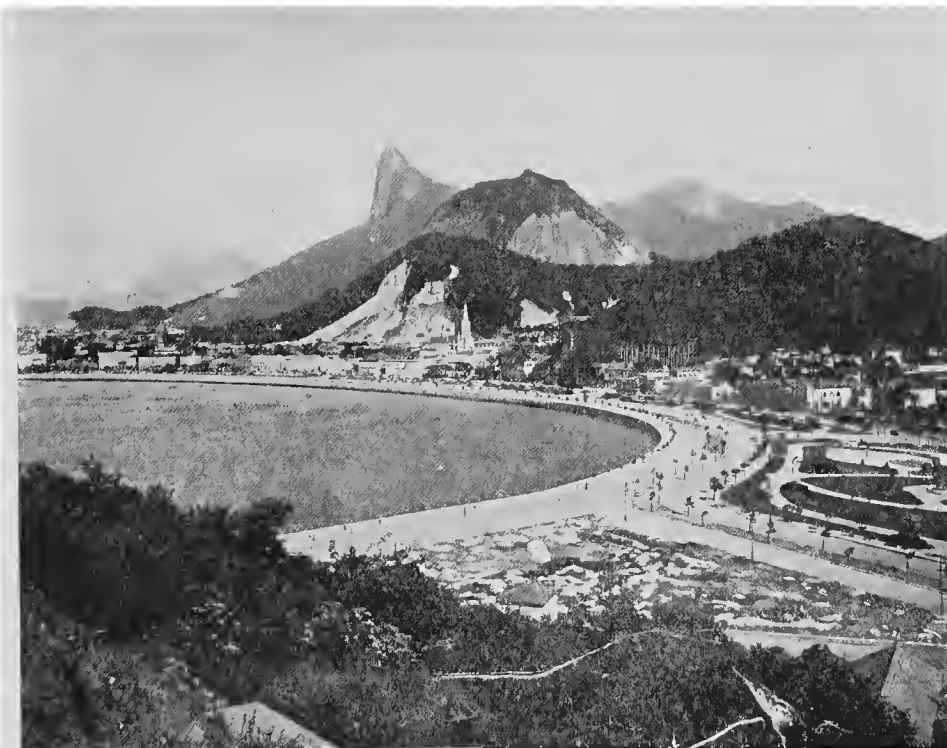
FIGURES 1 TO 6. Views in Budapest.



FIGURES 7 TO 10. Views in Budapest.



FIGURE 11. View of the King's Highway, London.



FIGURES 12 AND 13. Views in Rio Janeiro.



mental sites Boston has of late years done very little. Meanwhile a great city is growing up around us and opportunities are rapidly being lost. The formation of convenient thoroughfares incidentally creates sites for important buildings. Are the Court House and Symphony Hall and Horticultural Hall and the Conservatory of Music and the Christian Science Temple placed where they show to the best advantage? How much they might have added to the city if they occupied monumental sites! How vastly more important will the new Medical School buildings be, now that a dignified avenue of approach to them is determined upon.

Our report offers some suggestions for street changes that will create monumental sites, as well as for cutting streets through waste and deserted districts near the city centres, and for the profitable expansion of the city — expansion that might bring dead land into activity, raise taxable values, increase the use of our water front or harbor, and thus add to the riches of the city. Besides these subjects, the question of making future bridges between Cambridge and Boston less expensive and thus more possible, and the Charles River Basin more useful, without destroying its beauty, has been considered.

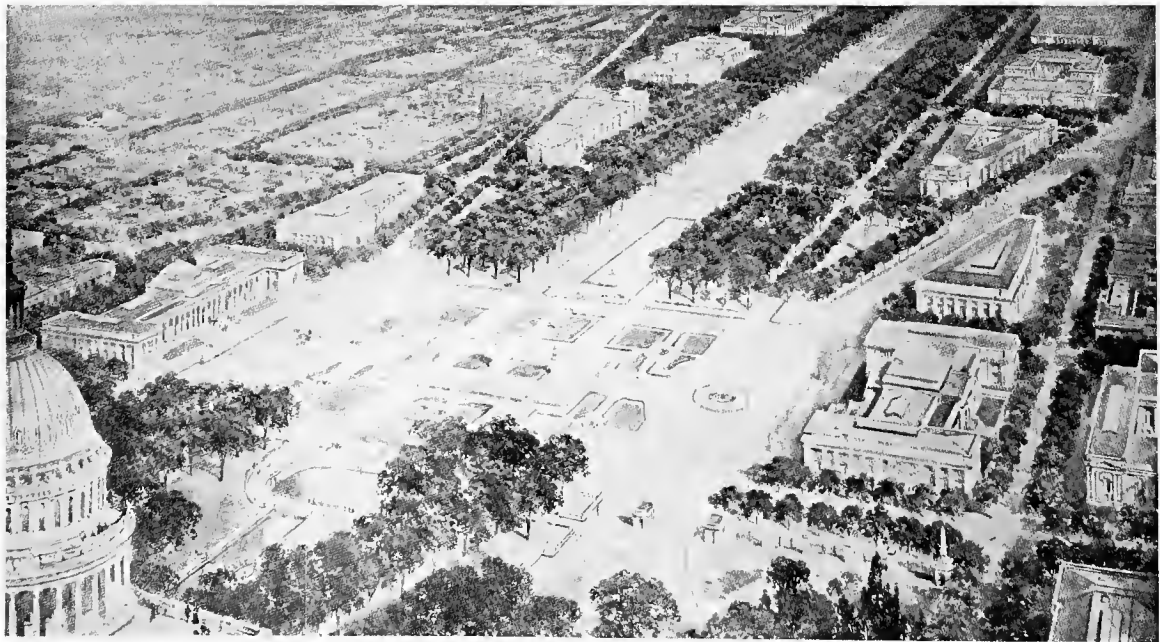
**Budapest.** We all know how foreign cities excel us in adornment. We know that this is not the result of happy accident, but that it comes from the intelligent effort of men who recognize that street planning is an art to be studied from an artistic as well as a utilitarian standpoint. We see this in Paris, in Vienna, even in London. It happens, however, also, in less important cities, and in the views here shown of Budapest one may see what is done by a city substantially like Boston in population and wealth, and in great part equally modern with Boston. It is, however, a city that cares far more than we do for the arts of civilization. Although we may not sympathize with the details of Hungarian taste, these views of the bridges over the Danube, the buildings on the island in the Park, the terraces and monuments beneath St. Matthew's Church, even the ordinary street architecture, indicate that these Hungarians value there more than we do here those things that make for beauty. (See Figures 1 to 10.)

Possibly difficulties are easily overcome in such a European capital as Budapest, because so much of it is modern, but old cities like Paris, Vienna, London, and many others, have done vastly more for the same ends. It was no light enterprise to build the boulevards around and through Paris and Vienna and to give their ancient monuments beautiful settings, and all over the civilized world cities, old and new, are emulating these great models.

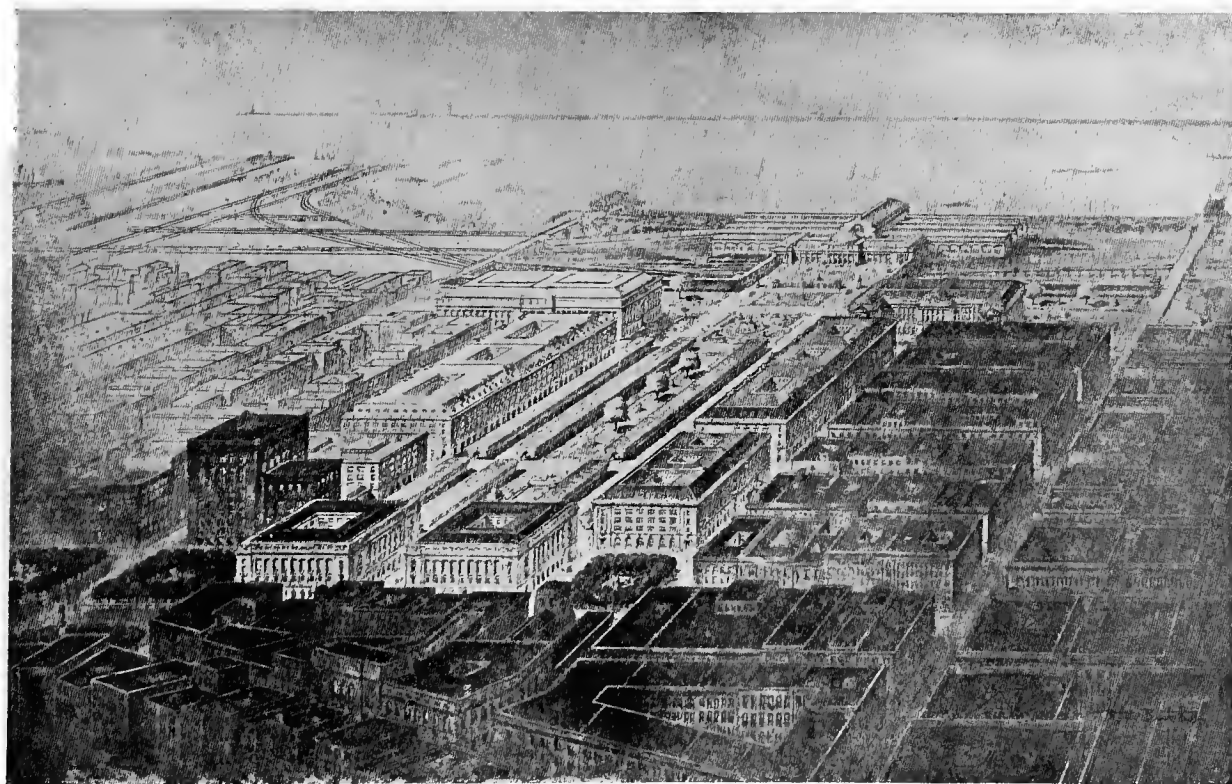
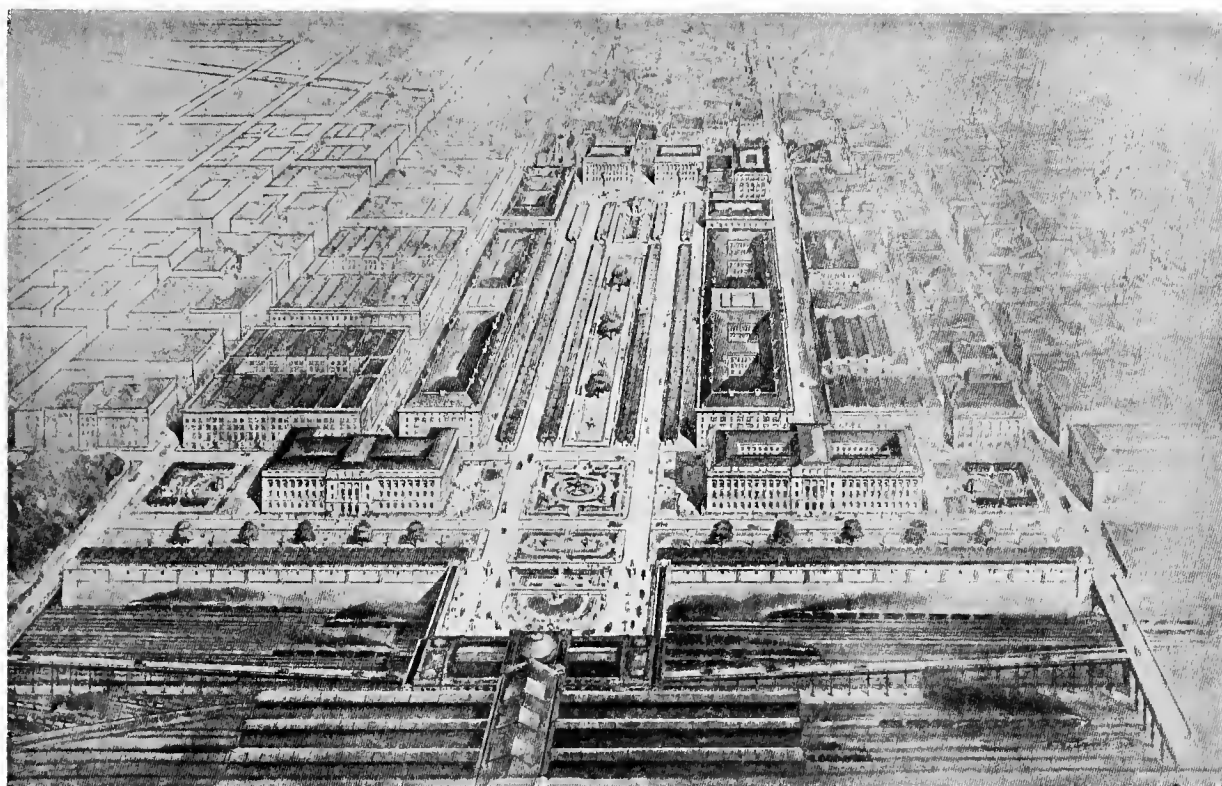
**London.** At this moment in London the Kingsway, running from Holburn near Southampton Row to the Strand near Somerset House, is nearing completion. It has been constructed through a densely-populated area at a cost of £6,120,380, and it is claimed that it will involve no final expense to the taxpayers, because the Council was permitted to acquire sufficient property to enable it to benefit from the improved values. In this improvement and in that contemplated on Regent Street we understand that the abutting builders are so kept under control that although many architects may be employed, the architectural continuity of the street is to be preserved. (See Figure 11.)

**Rio Janeiro.** The fever for municipal improvement has also reached South America, and we are told that in Rio Janeiro they are not only building fine docks and improving the harbor, but that a space  $2\frac{1}{2}$  miles long and 300 feet wide has been appropriated through the settled city from water to water for a boulevard 100 feet wide and over a mile long. The sale of the 100 feet on either side is said to have paid for the whole improvement. In the short space of eighteen months the city constructed this beautiful avenue and gained an enormous amount of taxable property. (See Figures 12 and 13.)

**Formosa.** The Japanese are planning a capital city for the island of Formosa. It is said that Mr. Fashima, the architect who has the design in hand, has recommended the essential principles of the original plan of Washington and is modelling his city on those lines.



FIGURES 14 AND 15. Proposed Improvements in Washington.



FIGURES 16 AND 17. Proposed Improvements in Cleveland.

**Newcastle.** In the last "Journal of the Royal Institute of British Architects" are careful studies for the municipal improvement of the city of Newcastle. It shows that the world moves when we find in this report the Art Commission of New York cited as a model for English imitation.

**Canada.** We may note that the American interest in this subject has spread over the border to Canada. Toronto has become deeply interested in a carefully studied plan of boulevards and main arteries of travel and of parks for the better ordering of that city.

**Havana.** Civic improvements are comparatively easy when made by autocrats. There is no better instance of this than what has been done in our day in the city of Havana. We see there a city cleansed, and beautified with parks and boulevards, by American despots spending wisely and honestly the money of their subjects. It was, indeed, at any rate in this respect, a benign despotism, and it produced results of which, as results, we Americans should be most proud.

**The Philippines.** The same success may be looked for in the Philippines. The proposed country city of Baguio is planned on a mountain table-land in a clear and open place. The designer has a clean sheet before him and control of the purse-strings of the Filipinos. That is an easy job. In Manila itself, where great improvements are in prospect, the work is also easy for much the same reasons, and we cannot but believe that the results will be as happy for Manila as was the case in Havana. We wish that a like despotic power might be exerted in some of our own cities. We can, however, gain new faith in the possibilities of a democracy when we find that much in the direction of municipal improvement is being actually though slowly done in cities throughout the country.

**United States.** It happens in fact that in these recent days an interest in municipal improvement has within a very short time spread all over our country. Those American cities which have had time to think are devoting energy and vast sums of money to work of this or of similar character. They find that municipal improvement not only tends to their own convenience, but also to attract strangers and to directly contribute towards a city's material prosperity. In most of the cities that have yielded to these impulses, the results have taken the form of parks or breathing spaces or recreation grounds. In this matter of parks, New Orleans, St. Louis, St. Paul, Minneapolis, Chicago, Cleveland, Buffalo, all are now following the example set by New York, Brooklyn, Philadelphia and Boston.

**Washington.** In December, 1900, was celebrated the one hundredth anniversary of the removal of the seat of government to Washington. The many governors and the officials then in the city urged that the time had come for the adequate and systematic improvement of the District of Columbia. At the same time the American Institute of Architects had its annual meeting in Washington, and made its main subject for discussion the development of parks and the placing of public buildings. One of its committees consulted with the Senate Committee of the District of Columbia, and in March, 1901, the United States Senate directed the committee on the District of Columbia to report to the Senate plans for the development and improvement of the entire park system of the District of Columbia. Accordingly, the commissioners were appointed who, as experts, prepared the elaborate plans for the development of Washington with which we are all familiar and which in great part are a return to the original design by L'Enfant. Their value is now recognized, and though there have been at least three attempts of the strongest kind to disregard them, each attempt has been frustrated. With every such case the position of the scheme as a guide for all future government work has become stronger.

Although the city has not adopted the plan, it has adopted the principle that governs it, and in doing so she has faced the spending of millions of money and the work of years to correct her mistakes and to make herself beautiful. She has arranged sites for public buildings around a mall that had become a slum and around the Capitol Square. She has provided for beautiful



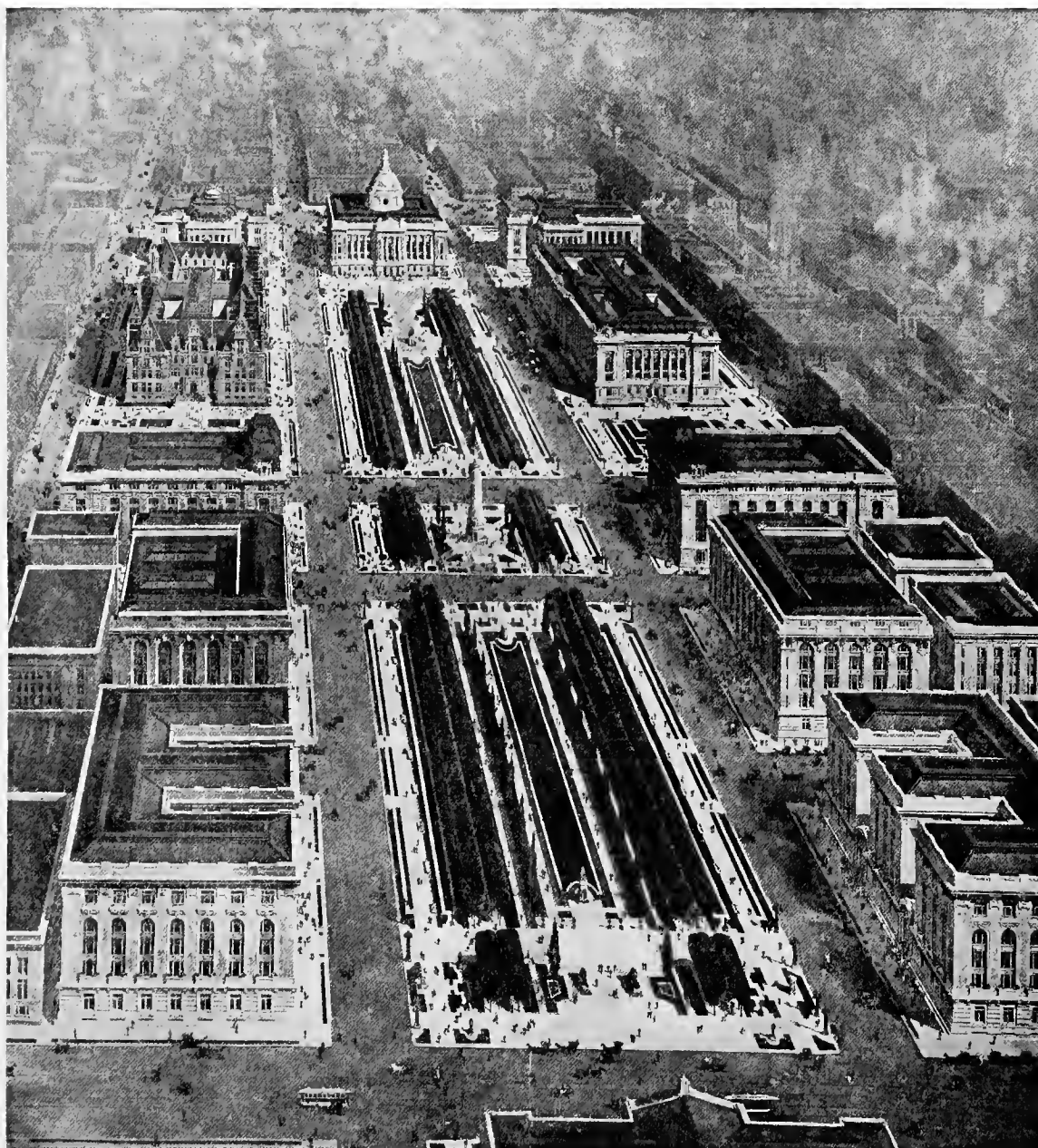
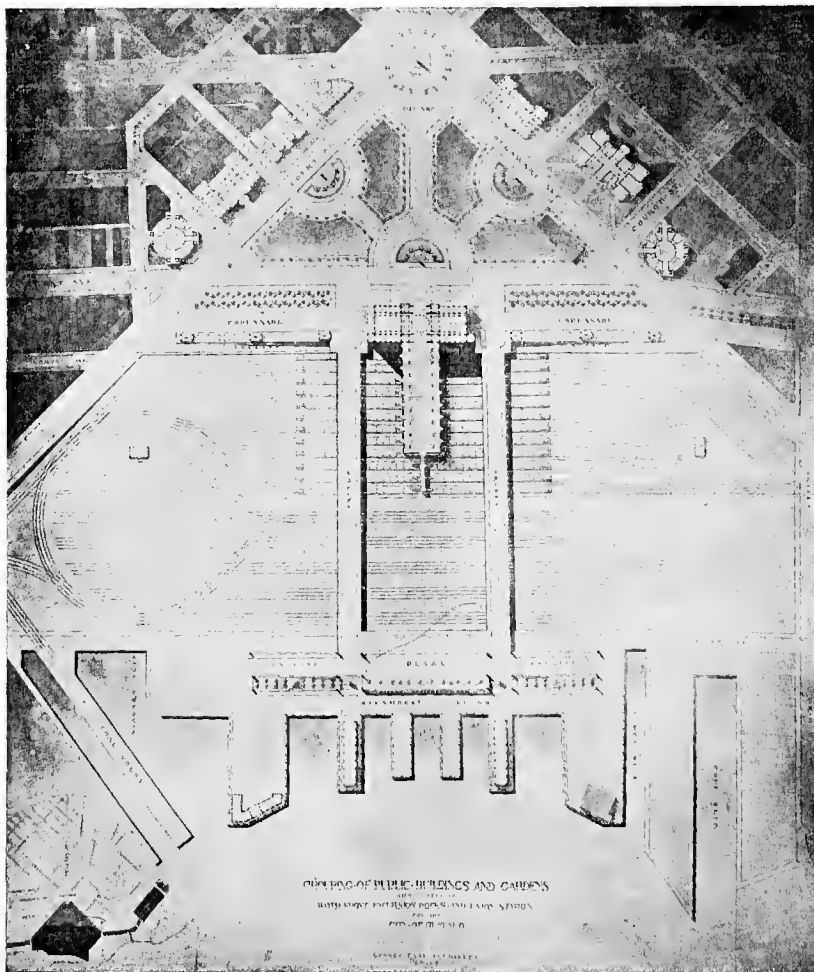
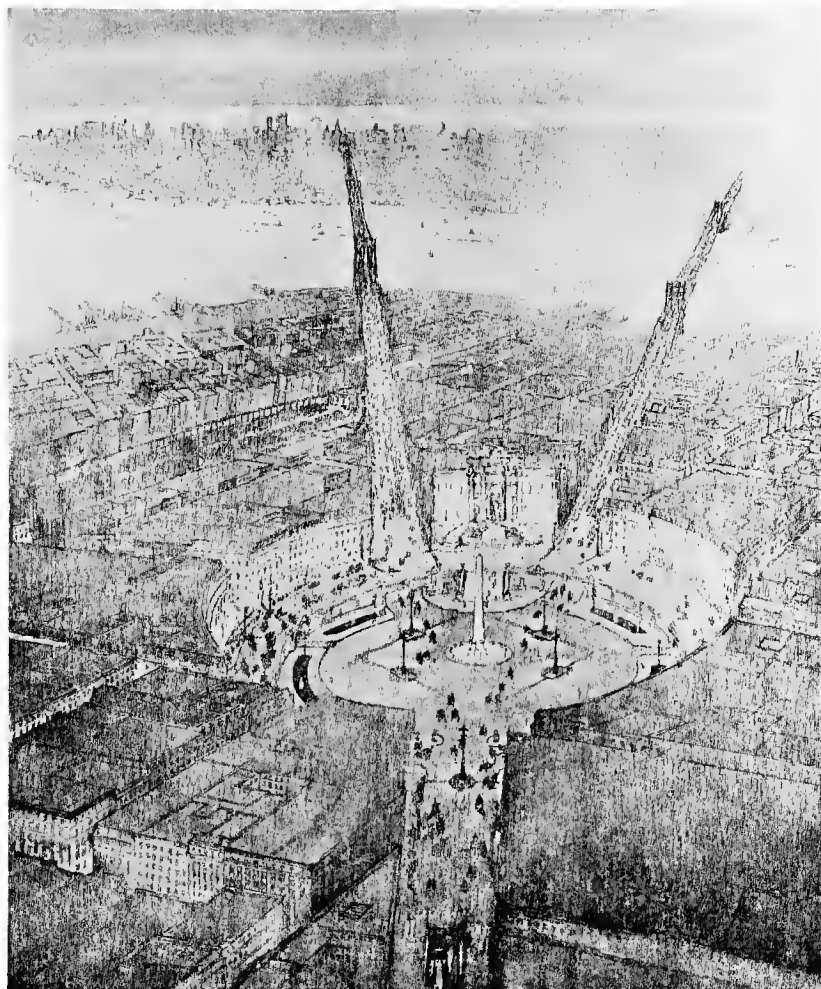


FIGURE 18. Proposed Improvements in St. Louis.



FIGURES 19 AND 20. Proposed Improvements in Buffalo.





FIGURES 21 AND 22. Proposed Improvements in New York.



parks and for a suitable gateway to the city in the form of a monumental railroad station on a great public plaza. As is proper, she has thus set the example of monumental planning for her sister cities in the United States (See Figures 14 and 15.)

**Philadelphia.** In the city of Philadelphia allied organizations have lately printed a pamphlet which forms a very complete study of what has been done in very many American cities in the building of parks. They now purpose printing a second pamphlet suggesting civic and municipal improvements for the city of Philadelphia itself. Indeed, many of our cities have taken this next step in the civilized ordering of their surroundings and have formulated plans for rapid and convenient transportation in and about their areas, and for suitable sites for public buildings, or, still better, for a grouping of several municipal buildings in a monumental way.

**Cleveland.** The city of Cleveland has for some years proposed building a city hall, a county building, and a public library. The United States Government is also building there a post-office and sub-treasury. The laws of the State of Ohio provide that cities of a certain size may appoint a commission that shall control the character and style of the public buildings and their location on land taken by the authorities. Under this law a commission of three was appointed at a salary of not over \$5,000 each, and a district of dead property close to the main centre of the town having been bought, around it are either building or to be built the United States Government building, the library, the city hall, the courts, and the railway station. The latter will thus form a veritable municipal gateway by which the stranger will enter at once into the heart of the city. In fact, this city has actually started work on a municipal group scheme which the average citizen of any city in the United States would pronounce "ideal, but absolutely impossible of fulfilment." (See Figures 16 and 17.)

**St. Louis.** The public buildings of St. Louis, both charitable and municipal, having become disgraceful in condition, the city of St. Louis, in September, 1903, created a Public Buildings Commission of three architects, without salary, appointed by the Mayor, to act in conjunction with the Comptroller and Commissioner of Public Buildings, to make a report on the remedy for the situation, with descriptions and estimates to the Municipal Assembly, at a cost not exceeding \$5,000. Their study was given to a definite problem, and their report is brief and illustrated with three or four good drawings. (See Figure 18.)

**San Francisco.** The city of San Francisco has also had a plan prepared, showing improvements of a most magnificent kind. Before the recent catastrophe one would have said they were out of proportion to the size and prosperity of the city. Many of the obstacles have been removed, and perhaps this plan, which seemed almost fantastic, may be realized in part or in whole sooner than many less ambitious schemes.

**Buffalo.** In this city thirteen railroads have signed a proposition for a new union station. A plan has been formulated by private enterprise for placing the union station on a dilapidated tract of land fronting on the lake and close to the busy heart of the city. Options have been obtained on much of this land. In front of the station would be a plaza on which would front the present city hall and other future public buildings. The docks will be reached by viaducts across the train yards back of the station. The projectors thus hope to raise values on poor property, provide adequate sites for public buildings, and a suitable water front and station for the largest collection of tracks in the country outside of Chicago. All this is urged on the Legislature by the Chamber of Commerce, but the scheme has not as yet been fully accepted. (See Figures 19 and 20.)

**New York.** The city of New York, in December, 1903, created a commission to prepare "a comprehensive plan for the development of the city of New York." They have made one provisional report with most elaborate illustrations. We believe another report that mainly relates to Brooklyn is nearly ready. The subjects that these reports discuss are such as the following : —

Uniformity of construction in piers on the water front, with public promenades on the roofs of the buildings on the piers; an overhead elevated street along the North River water front; approaches to the new bridges; ingenious suggestions to better conditions at crowded street crossings; extensions of various thoroughfares; and, finally, suitable sites for public buildings, school-houses and engine-houses, with a view to their effective appearance, and through them the adornment of the city. (See Figures 21 and 22.)

Besides organizing this commission to prepare a plan of development, the city of New York also delegates to its art commission more power than such a commission has in other cities. The New York Art Commission has jurisdiction over works of art to be acquired and the location of those possessed by the city; over all designs for decorative structures; over the designs of more serious structures on public land, when referred to them by the Mayor or Aldermen; and over the designs of *all* structures costing over \$1,000,000 standing on public land.

One hundred and twenty propositions were acted upon in 1903 and eighty-seven in 1904.

The Mayor and the presidents of four societies are members *ex officio*, and six members are appointed by the Mayor.

They have lately disapproved the plans for the very important Hudson-Fulton Bridge over Spuyten Duyvil Creek, in the belief that a more satisfactory structure than that proposed can be obtained with further study.

**Boston.** The city of Boston has an art commission appointed by the Mayor from lists furnished by different societies. This commission controls works of art and their location, and may, when requested by the Mayor or City Council, control the design and location of municipal buildings and other structures on public land.

Finally, the Boston Society of Architects, guided by a desire to further in their own city similar ends to those that we have here described, appointed a year ago a large committee to consider this subject of municipal improvement. We have collected such sketches and suggestions as have from time to time been proposed for the prosperity or convenience or adornment of this city, and those which seem to us to have real significance we offer in this report. We have not endorsed any of them; they are only suggestions to indicate the way in which these subjects should be approached. We trust that some of them may grow beyond the stage of suggestions and may result in useful improvements in the city.

**Conclusion.** If we review the movements towards municipal improvements other than parks in the different cities of the country, we find various results in different cities.

We find in St. Louis and Cleveland the appointment of a committee to study a definite group of municipal buildings; in Washington, the Philippines and San Francisco a commission to prepare a general plan of development; in New York, an art commission with extended power over matters of design and location; and in Boston we have a similar art commission, but with restricted powers.

Our committee at this moment is not prepared to urge any immediate measure looking to the advancement in Boston of any of the matters covered by our report. We publish this pamphlet, in order to arouse public interest in these subjects, and to show how either one or several or all of our sketches and suggestions, or the suggestions of others, should be studied if undertaken by those with more powers than we possess. It is obvious, we think, that a commission endued with proper authority and with funds could obtain willing advice and valuable testimony from sources that we, as a committee of a professional society, are utterly unable to reach, and could control thoroughly what has hitherto been done by separate communities, with no concerted action and following no comprehensive plan.

### A Diagnosis of the Case.

One of our members thus sums up the present conditions which stand in the path of improvement in Boston : —

In Boston building operations are practically at a standstill. On the other hand, we hear of vast activities in New York and throughout the country. For this state of affairs reasons exist, and one of our members thus analyzes the conditions by which, in his opinion, the growth of the city is impeded : —

FIRST. By the great areas of unoccupied space (land and water) which lie in the very heart of the city, cutting off sections from each other and preventing communication.

SECOND. By too restrictive building laws, both as to height and material, which are largely responsible for the non-development of some of these lands, although at the same time they allow a belt of inflammable dwellings in the outer wards, and drive many people to Brookline, Newton, Cambridge, etc., where their taxable property as well as their good qualities of citizenship are lost to Boston.

Taking up the first of these counts, there are included in these vacant spaces which, in their present condition, isolate sections, congest traffic, and prevent expansion of the business district, —

FIRST. The Boston & Albany car yard, extending from Exeter to Dalton Streets, which isolates and injures the Huntington Avenue section by separating it from the high-class residential district between Boylston and Beacon Streets.

SECOND. The South Bay, which should to be filled and utilized.

THIRD. The land formerly occupied by the Boston & Providence Railroad, which, being unutilized, isolates and injures the Columbus Avenue district.

FOURTH. The park system of the Fenway, which obstructs the city's growth to the southwest.

FIFTH. The Charles River, which isolates the Riverbank lands in Cambridge, owing to lack of means of communication.

If these spaces could be better utilized, they would comfortably accommodate a very large population and give easily accessible sites for mercantile and manufacturing buildings. As much of this tract is within walking distance of down town, the transportation facilities would not have to be greatly increased; also, in much of the district the streets are all constructed complete with sewerage and water supply and are lighted every night.

To overcome these obstacles to a generous development, the following action is suggested : —

FIRST and SECOND. An investigation should be made as to the feasibility of an exchange by which the South Bay would be filled and utilized by the Boston & Albany Railroad as a car yard, thus freeing the Boylston Street land for building purposes. The South Bay is less than one half as far from the terminal as is the Exeter Street yard, and is already reached by the New York, New Haven & Hartford Railroad.

The land at the South Bay would not be nearly as valuable as that at Exeter Street, and there would be plenty of room there for both the car yard and a business district. The Exeter Street land is now urgently needed, and the city's business growth in its direction is being checked by want of it.

Should such an exchange prove impracticable, because of the difficulty of crossing the New York & New Haven tracks, possibly some arrangement could be made in the direction

of freeing a portion of the land along the edges of the Boylston Street car yards, and the extension of, say, West Newton Street across the yard by a bridge to Boylston Street.

THIRD. Immediate action towards getting sufficient cross streets through the Providence Station lands, with a view to freeing not only all that unused property but all the city to the south of it.

FOURTH. The barrier of the Fenway Park could be broken by the extension of Westland Avenue, relocation of Boylston Street, and construction of the cross street from the new Art Museum to the "Five Corners" on Beacon Street, as shown on our map of the Fenway lands.

FIFTH. Such changes in the building laws as will tend towards economical construction of modern apartment houses on the new land in which suites can be profitably rented at moderate prices to that most desirable class of the population,— young clerks, business and professional men and their families,— who now, because of high rents, are driven to Brookline, Newton and other suburbs. It should not be forgotten that while a resident of Brookline gains his livelihood in Boston and shares in the benefits of the city's streets, parks, sewerage, public library and fire department, he often contributes nothing to the taxes nor to its good citizenship.

In short, to improve Boston, consolidate the population by filling the gaps in the city plan; avoid congestion by enlarging the business district; and keep within the city limits the prosperous and educated class that now goes to the suburbs.

### **An Inner Boulevard. — An Outer Boulevard.**

The committee to whom these matters were referred thus describe two possible boulevards encircling the city. (See Figure 23.)

A large number of main thoroughfares radiating from the city proper extend into the suburbs of Boston and resemble, in their general arrangement, the spokes of a wheel.

Dorchester Avenue, Bluehill Avenue, Washington Street, Tremont Street, Huntington Avenue, Beacon Street, Commonwealth Avenue, Massachusetts Avenue, Somerville Avenue and Mystic Avenue, to name only the most important, afford reasonably direct means of communication between the central portion of the city and the outlying centres of population.

It is a comparatively simple and easy matter to travel from the central portion of the city to almost any point in the outlying suburbs, or, conversely, to go from any point in the suburbs to the city proper; but when we attempt to travel by electric car, carriage or automobile across from one outlying section to another, as, for instance, from Cambridge to Roxbury Crossing, or from Longwood to South Boston, or from Brookline to the Revere Beach Parkway in Somerville, we find that the available routes are inconvenient and circuitous, and if by the electric car it will probably be necessary to transfer several times.

To better these conditions the construction of two belt lines is suggested, encircling the city on the south and west, and crossing all of the main radiating lines spoken of above.

The first of these, lying within the line of hills which encircles the city on the south and west, might be called "The Inner Boulevard," and the other, lying at a considerably greater distance from the center, "The Outer Boulevard." Both of these boulevards consist in part of existing streets which only need to be widened and connected by the necessary missing links to form continuous lines of communication.



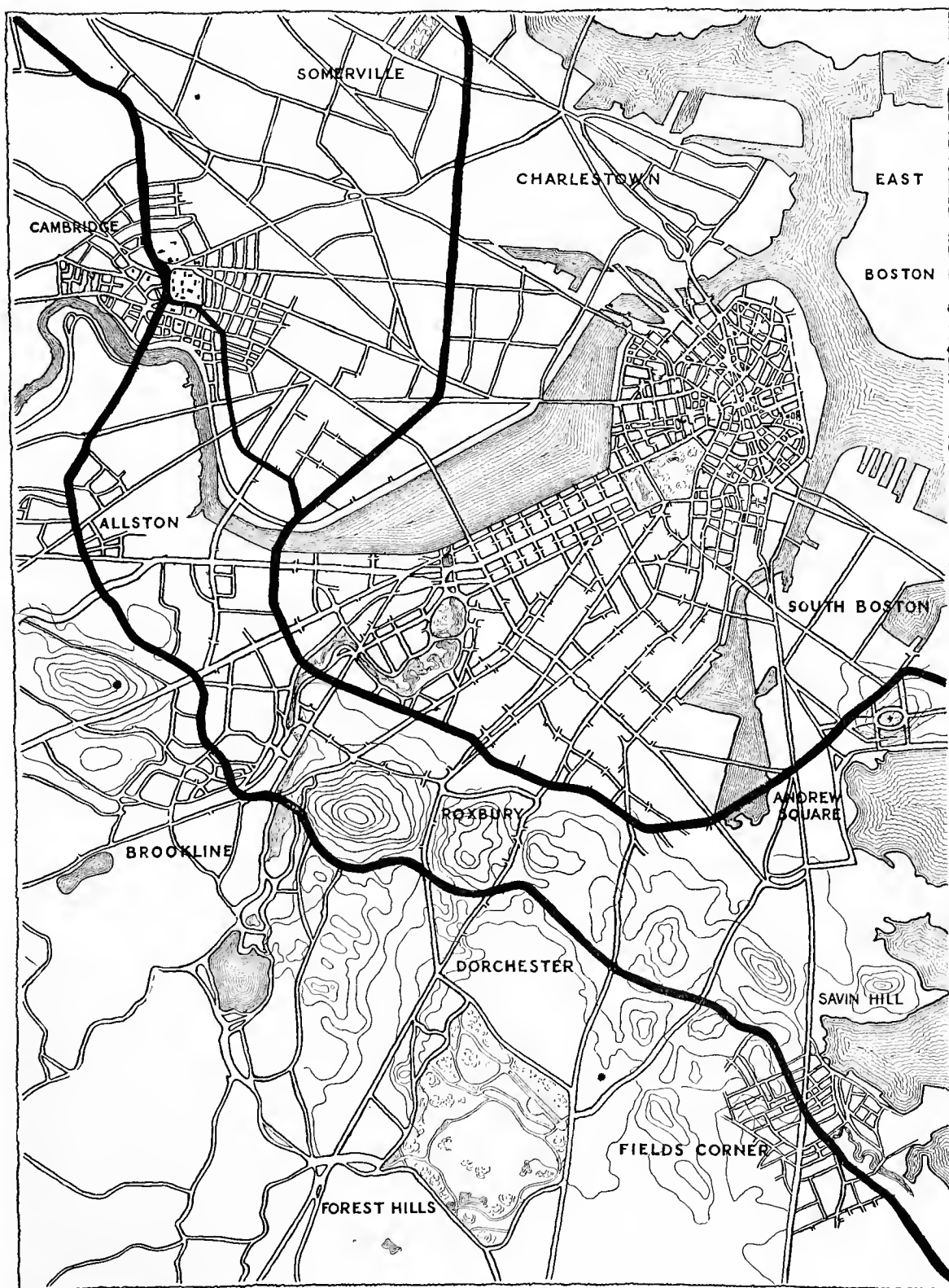


FIGURE 23. Diagram Showing Location of Proposed Inner and Outer Boulevards.



THE INNER BOULEVARD begins at Andrew Square, in South Boston, and crosses the now vacant mud flats of the South Bay to the vicinity of the Dudley Street Station in Roxbury. Thence, swinging a little to the north, it follows the line of Vernon Street, crossing Tremont Street a little to the east of Roxbury Crossing. Continuing to Huntington Avenue, it next traverses the vacant lands of the Fenway region, passing between the Gardner Museum and the new Normal School, and crosses the newly planned approach to the Medical School at right angles, giving the opportunity for a monumental square at this point. Continuing to Brookline Avenue opposite Short Street, and thence, by way of Short Street, it passes in front of the new dormitory group of Simmons College, and then across Muddy River by a new bridge to Hawes Street, passing by the Sears Memorial Church; then by way of Hawes Street to Beacon Street. From Beacon Street it goes by a direct line to Cottage Farm Bridge and so across to Cambridge. At this point the boulevard divides, one branch going direct to Harvard Square by way of Putnam Avenue, and the other through East Cambridge and Somerville to Broadway Park, where it joins the Mystic Valley and Revere Beach Parkways. The best location for this latter route would appear to be the roadbed of the Grand Junction of the Boston & Albany Railroad.

As the city of Cambridge develops, the numerous grade crossings of this railway will become intolerable and some plan will have to be adopted for getting rid of them. It would seem that the best interests of the city would be served by the abandonment of this location by the railway company. This idea was suggested in the report of the Rapid Transit Commission of 1892, and several plans were recommended by them for connecting the main line of the Boston & Albany with its freight yards in East Boston.

A variation from this route, with a different crossing of Muddy River, would be as follows:—

Widen and extend Short Street and pass between the new dormitories of Simmons College and the grounds of the Longwood Cricket Club.

From this point a new viaduct across the Muddy River and the Brookline branch of the Boston & Albany Railroad brings us to Carleton Street. The widening and extension of Carleton Street to Commonwealth Avenue forms the next section, and the boulevard then crosses the Charles River by a new bridge opposite Chilmark Street and proceeds to Cambridge as described for the other route, and connects with the roadbed of the Grand Junction Railroad at an easy angle.

A new bridge at this point, in preference to the present Cottage Farm Bridge, would afford easier approaches on either side. The Cottage Farm Bridge in its present state can only be regarded as a temporary structure and would be obviously unfitted to serve as a permanent feature in any far-reaching plan of improvement.

The boulevard should be constructed of ample width, providing for grass plots and rows of trees on either side, between the roadway and the sidewalk, with a separate reservation for the electric car tracks.

THE OUTER BOULEVARD starts from Fields Corner in Dorchester, the junction point of two great thoroughfares, Neponset Avenue and Dorchester Avenue. From Fields Corner the first section of the boulevard is formed by the widening of the present Adams Street to Meeting House Hill. This is one of the most interesting spots in Boston, and deserves to be made more accessible. Here is a fine old colonial meeting house, another church of more modern type, with a very picturesque tower, and the Mather School,—the whole forming a most interesting group. From the crest of the hill, at the rear of the school, a fine water view is to be had, which could be much improved by cutting through a vista to the water's edge.

From Meeting House Hill the boulevard traverses the highland district of Dorchester, crossing, in turn, Columbia Road, Blue Hill Avenue, Warren Street, Humboldt Avenue, and Washington Street, to the junction of Centre Street and Columbus Avenue in Roxbury. This is another important focal point.

The boulevard then continues to the west of Heath Street, on a gentle ascent, passing by the rear of the Jefferson School to the crest of the ridge above South Huntington Avenue, affording at this point a fine prospect of Brookline Village and the hills beyond. The boulevard then descends to the junction of Brookline Avenue and Washington Street. At this point the construction of a plaza or rond-point is suggested, with a transfer station for the electric lines which converge here. (See Figure 24.)

From this point the boulevard follows the line of Harvard Street to Coolidge's Corner and Allston.

From Coolidge's Corner a cross connection may be made to Central Square in Cambridge by way of Pleasant Street and Magazine Street, requiring only the construction of a new bridge across the river to make this a continuous line.

The route here suggested is the result of a careful survey of the territory, together with a study of the contour lines, and, with the exception of the rise from Brookline Village to South Huntington Avenue, is free from heavy grades.

The Outer Boulevard crosses the various lines of steam railway radiating from the city at or near the following stations, in order: the Harrison Square Station of the main line of the Old Colony; the Fields Corner Station of the Milton branch of the same road; the Bird Street Station of the New York & New England; the Heath Street Station of the Boston & Providence; and the Brookline and Allston Stations of the Boston & Albany.

This outer line of boulevard should also eventually be used for a circuit line of surface electric cars.

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### Development of the Fenway.

The following suggestions are made by those who have studied this matter:—

The lack of adequate cross-lines of communication is apparent in all parts of Boston. It is by all means desirable that the city should be more closely knit together by direct cross-lines such as that which was obtained between Cambridge and the Back Bay by the building of the Harvard Bridge. These are difficult of attainment in the crowded city, but they are quite within reach in such unsettled portions of the town as the Fenway.

The future importance of this part of the city is assured by the character of the buildings which have been or soon will be built there. In looking westward toward Parker Hill from the Boylston Bridge anyone will recognize the great possibilities of this region; and the Gardner Museum, Simmons College, the new buildings of the Harvard Medical School, and those of the Normal and Girls' Latin Schools, are worthy of a better setting than they now have.

The fact that large areas of this land are undeveloped and that the streets are only in part constructed makes it yet possible to carry out important changes here without excessive expense, but advantage should be taken of the opportunity before further building has fixed the present street lines.

An adequate approach to the Harvard Medical School is already assured through the efforts of public-spirited citizens and the co-operation of the city authorities, but even this great improvement will not be perfected until a suitable ending is given the new street where it joins the park.

— There is, however, elsewhere in the Fenway a great lack of adequate cross-thoroughfares, the street intersections are awkward, and the advantageous sites for public buildings or monuments are by no means as numerous as they easily might be.

Those who travel on the Ipswich Street cars have cause to wonder at the crooked corners on that route. Consider also by what a circuitous route one must travel from Bay State Road to

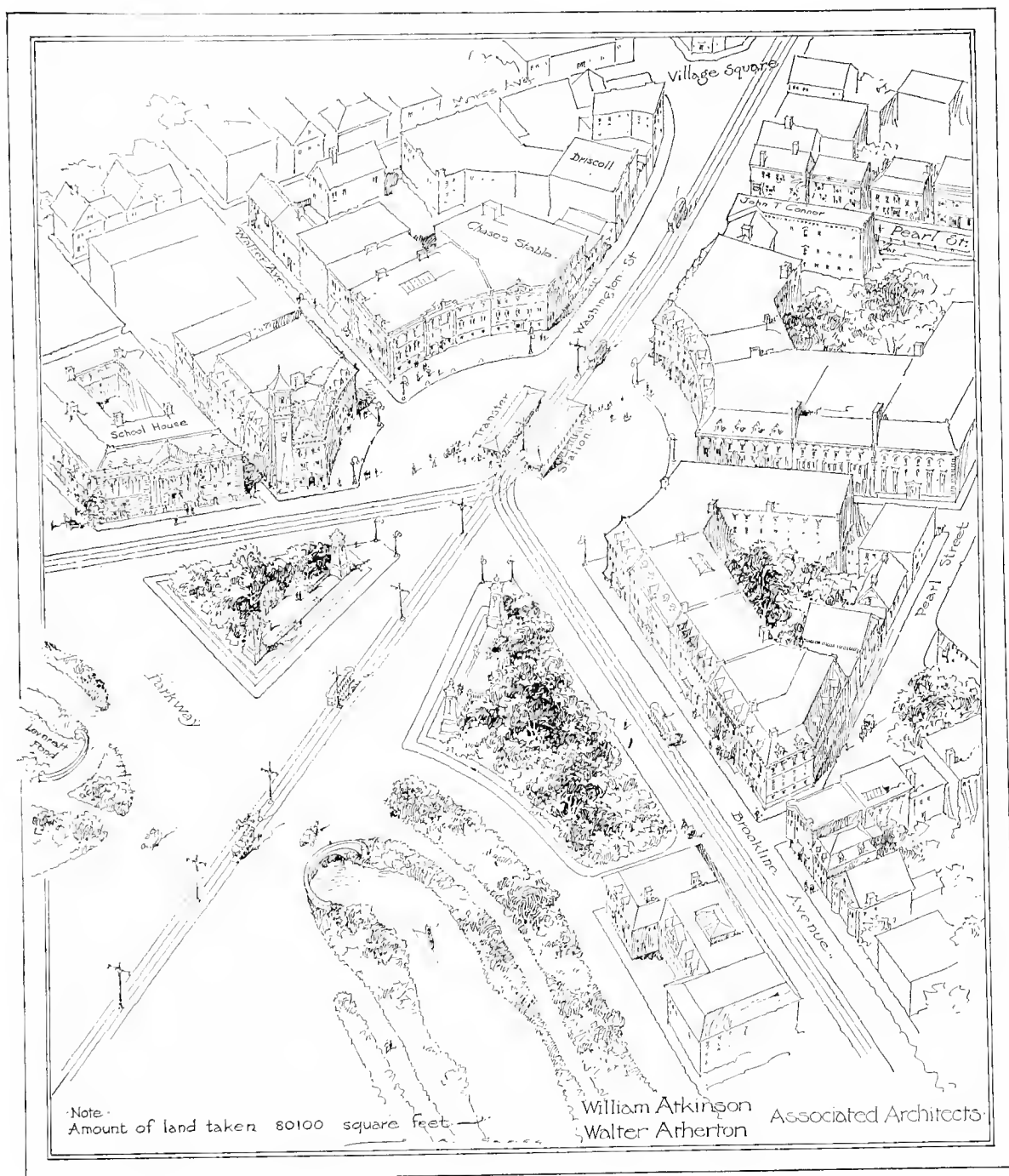


FIGURE 24. A Plan for an Entrance to the Town of Brookline.



Symphony Hall, and the lack of adequate approaches to the new site of the Museum of Fine Arts from the north and east. (The slow development of the Fenway may be attributed in part to this lack of adequate cross-thoroughfares.)

The plan suggested for the Fenway is shown in Figure 25, and the main features of it are as follows: —

Extending from Huntington Avenue to Brookline Avenue the plan shows a portion of the "Inner Boulevard," which is described above. This section of the proposed boulevard should be constructed at once before the opportunity is lost.

The second feature of the plan is the creation of a plaza or rond-point at the inner end of Boylston Street, at its intersection with the axis of Westland Avenue. The latter street is shown as extended across the Fens by a low causeway, and its junction with Boylston Street is made a focal point.

This rond-point would make a fine site for some future memorial statue or fountain.

The present crooked Ipswich Street is straightened and made to intersect with Boylston Street at an angle symmetrical with Westland Avenue. These two changes alone, simple and comparatively inexpensive, would make a great improvement.

This rond-point is still further emphasized by a broad cross-thoroughfare extending from Huntington Avenue by the site of the new Art Museum to the so-called "Five Corners," or the junction of Brookline Avenue, Beacon Street and Commonwealth Avenue.

By a still further extension across the basin the lower end of the proposed island in the Charles River is reached, and so across to Cambridge, thus providing one more of those desirable cross-thoroughfares, the need of which is elsewhere spoken of.

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### Development of the Charles River Basin.

When your committee made their earliest collection of schemes for the improvement of Boston, one was presented for the development of the Charles River Basin which included an island. It then appeared that another member had prepared another scheme also including an island. It is of interest that this thought occurred to two different designers without any consultation, for it certainly adds force to this novel suggestion.

Both of these designers intended that the island should not only shorten the length of the bridges to Cambridge but should also offer building sites of greater or less magnificence. Later, another member suggested that many might regard the hope of gaining productive real estate here as visionary, yet an island might be worth having even without any such speculative intentions.

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We will describe these three versions of this suggestion, but first give a description of the present conditions of this great sheet of water: —

When the ancient tidal areas of the Back Bay and Cambridge were filled to reclaim them for building purposes the Charles River Basin was not reserved in the heart of the district for æsthetic reasons. On the contrary, it was reserved by the War Department simply as a storage place for incoming tides, it being then believed that the outrush of such a great volume of water at ebb tide was necessary to prevent the formation of silt shoals in the harbor. Within a few years it has been decided that the value of the basin for this service is of no importance, and the government has authorized a dam to be built at the mouth of the Charles which will stop the former tidal movement. The original restrictions determining the size of the basin being removed,

we are at liberty to consider as matters of the very first importance the communication across the basin and the development of the surrounding land for private and public occupation, while preserving for æsthetic as well as practical reasons the advantages of the water frontage.

The Basin, between the Cottage Farms Bridge and the new West Boston Bridge, is a much larger sheet of water than is popularly realized. Its area is over ten times that of Boston Common and over twenty times that of the Public Garden, while it equals the entire extent of Franklin Park; it is considerably larger than the upper portion of Boston Harbor above the Cunard Docks, embracing the water-sheet bounded by T Wharf, the Red Star Docks, the Navy Yard, Chelsea, and East Boston; and it is approximately eleven times the size of the Binnen Alster Basin at Hamburg, Germany. A comparison of its width with familiar waterways is no less striking. (See Figures 26 to 34.) It is wider than Boston Harbor between T Wharf and East Boston; it is three times the width of the Thames at Westminster Bridge, London, seven times the width of the Seine opposite the Eiffel Tower in Paris, and about ten times the width of the Tiber at the Castle of St. Angelo in Rome. It exactly equals the Rhine in width at the great Cologne Bridge. So broad is the basin that the eye finds more pleasure in the contemplation of the sky above it and the waves which ruffle its surface than in the buildings and human activities faintly discernible upon its distant shores—shores which promise in the future to be as fine as the river margins of any European cities.

Boston and Cambridge are in a great measure visually separated from one another by this sheet of water. Their physical separation is also considerable, inasmuch as the bridges, on account of their great length, are too costly to be provided in adequate numbers. At present there are bridges once in each mile, while in London and Paris they occur from four to six times as often.

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The author of the design first presented thus describes what he names St. Botolph's Island (see Figures 35, 36 and 26):—

At present the Charles River separates Cambridge from Boston, instead of combining it with the general metropolitan scheme.

This water space is too large for proper effect, for at the Harvard Bridge it is 2200 feet wide. Passage over the bridge is often disagreeable, as there is no protection from the savage northerly winds which blow on through the streets of the Back Bay and fill them with circulating dirt. The space is much greater than any similar water space in Continental cities, where one may easily discover that a far greater effect may be obtained from a water area a tenth or even a twentieth of the size of this basin. At a height of fifteen or twenty feet above water level, the eye refuses to take in distances greater than 750 feet, and therefore a waterway of this width is as good for æsthetic purposes as an expanse of 2,200 feet.

From an artistic standpoint the present basin is empty, vague, and uninteresting. Such an island as is proposed would form the most desirable focus, would give scale to the banks of the river and would leave adequate waterways on either side for all practical and picturesque effects. Buildings here would have the great advantage of being seen from a considerable distance. They would acquire dignity through a certain aloofness. The views, both from the land and from the water, would be constantly varied, and such an island, with high stone embankments crowned by balustrades broken by statues, with domes and towers of public buildings, civil and ecclesiastical, rising above a circle of trees, the whole reflected in the still water that surrounded it, would be almost unique in the line of civic beauty, whether in the Old World or the New. On new land of this kind special restrictions as to the height and design of buildings could be made, and a certain amount of unity of style would be possible, as would not be the case in an old portion of the city, where existing buildings would have to be taken into consideration.

The buildings that would rise here might depend, more or less, on the thus far unsolved



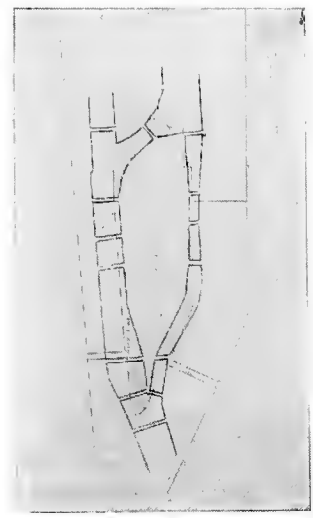
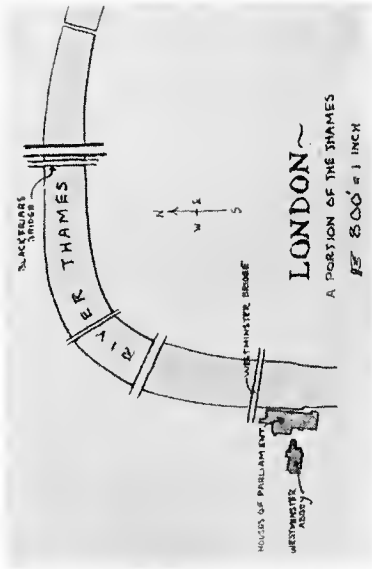


FIGURE 26. Island No. 1 Compared with Paris.

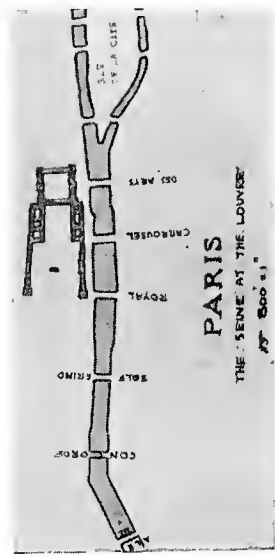


FIGURE 28.

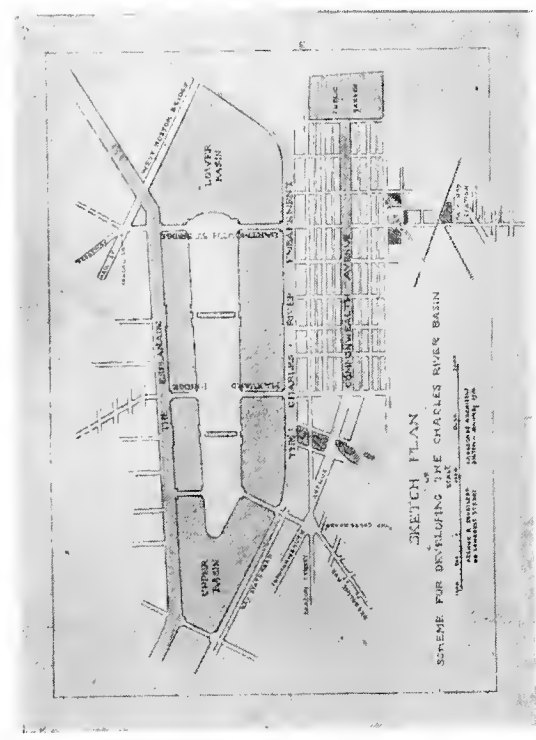


FIGURE 27. Island No. 2 and Surroundings.

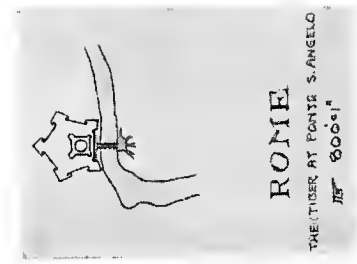


FIGURE 29.

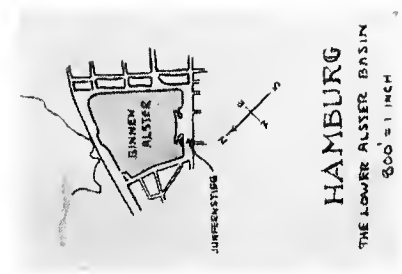


FIGURE 31.

Charles River Basin Compared with Other Waterways. (All drawn to the same scale.)



FIGURE 32. View of the Thames at London.



FIGURE 33. View of the Alster Basin, Hamburg.

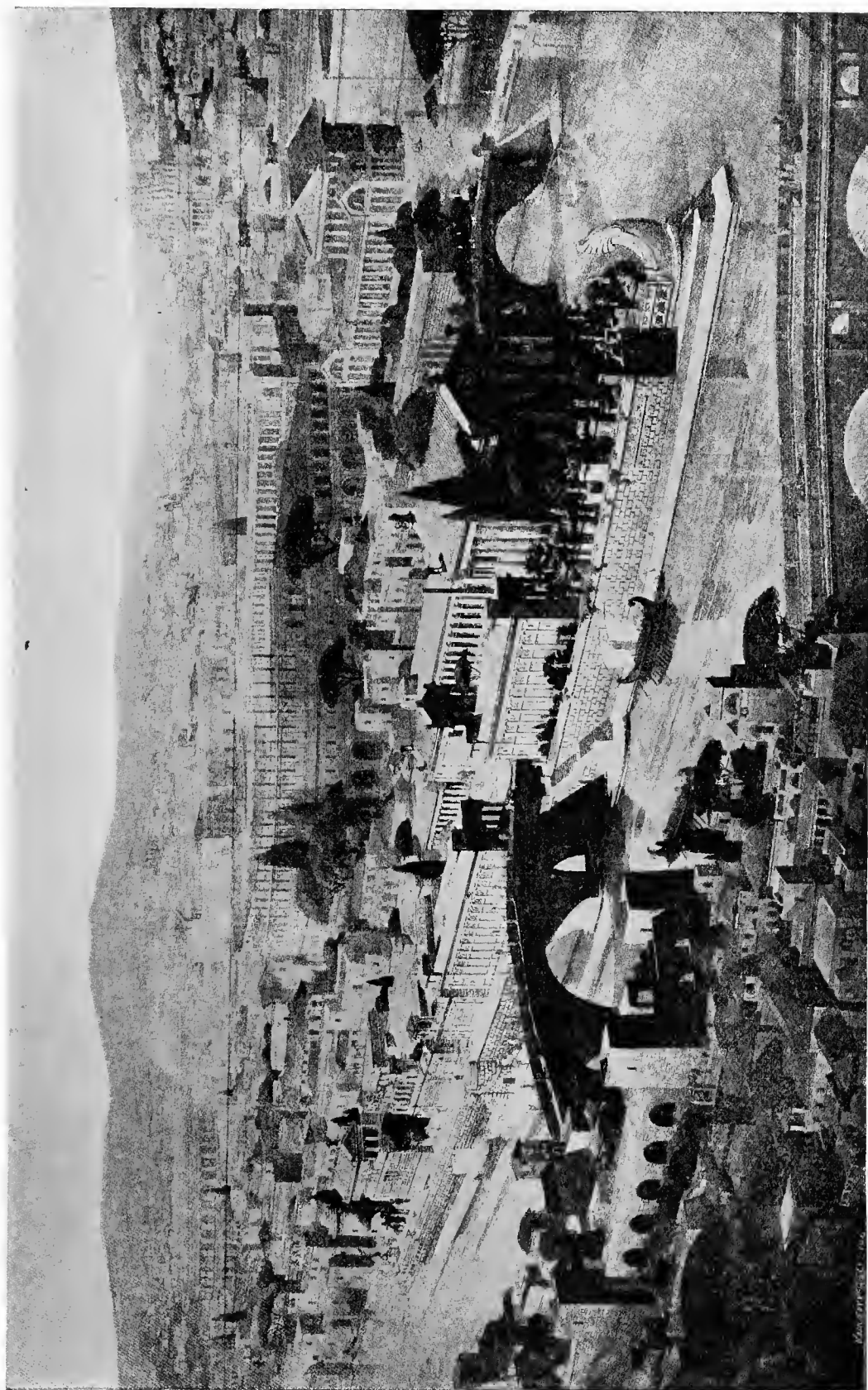


FIGURE 34. The Island in the Tiber, Rome. Restoration by Patouillard.

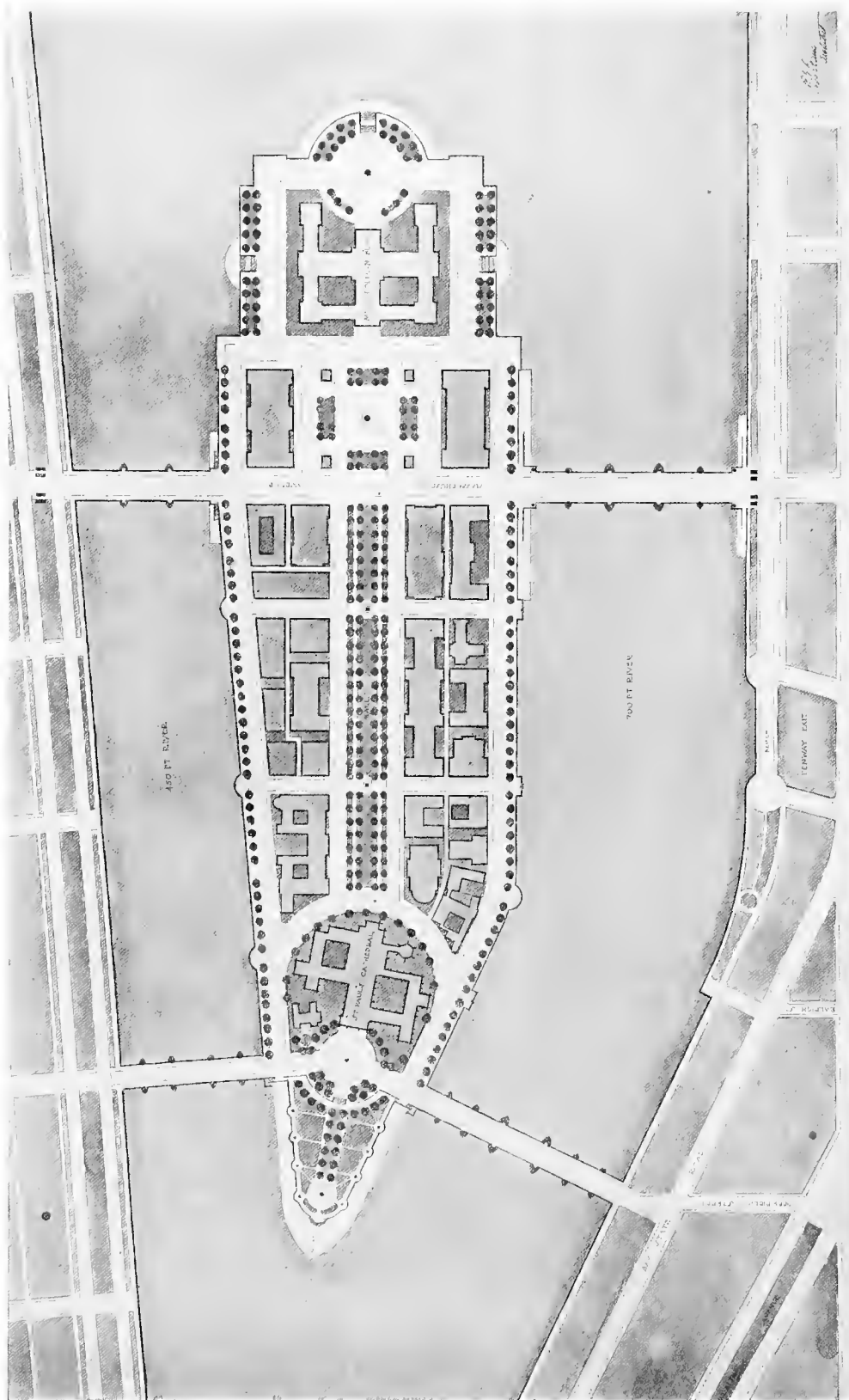


FIGURE 35. Plan No. 1, for an Island in the Charles River.

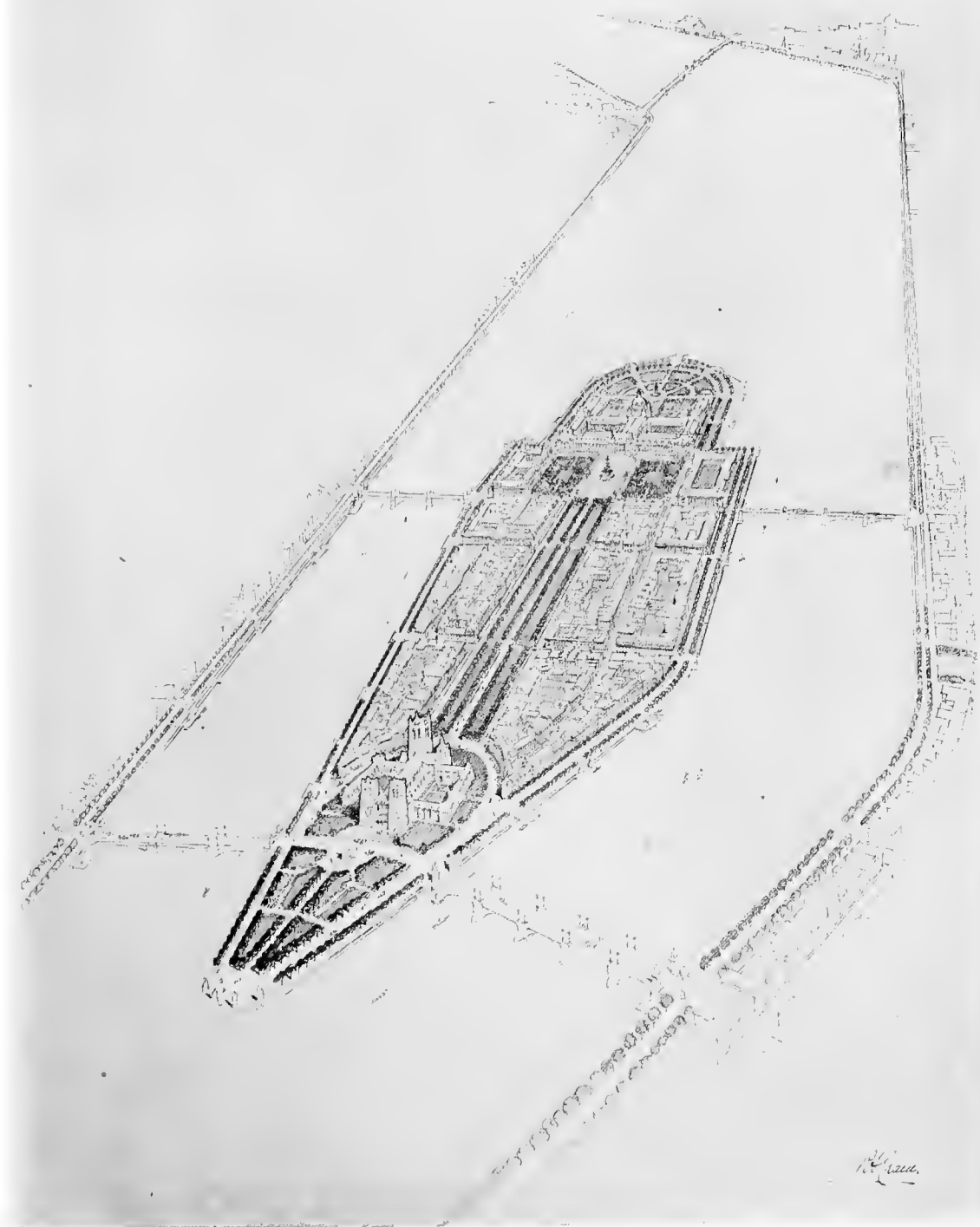


FIGURE 36. Plan No. 1, for an Island in the Charles River.

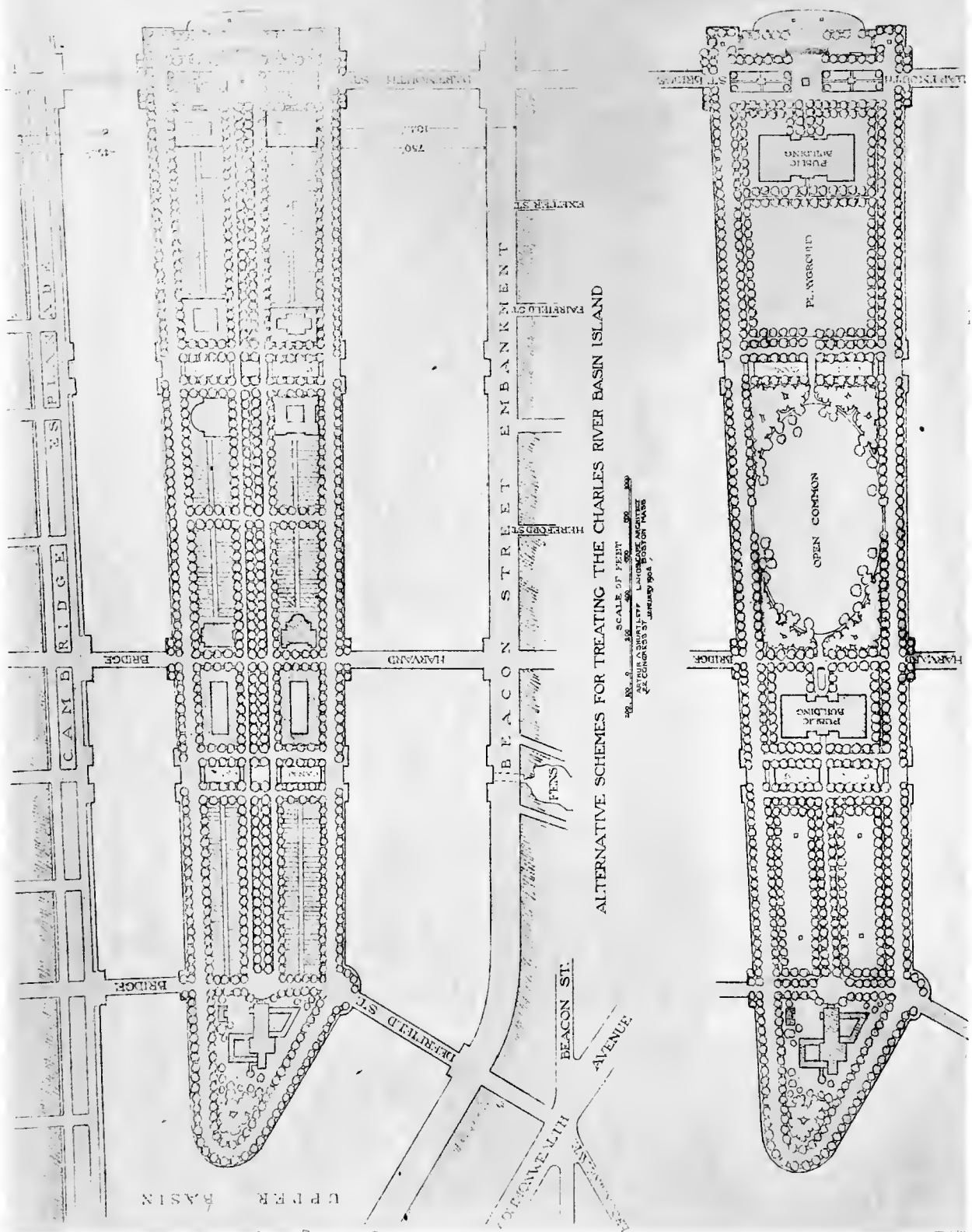


FIGURE 37. Plans Nos. 2 and 3, for an Island in the Charles River.

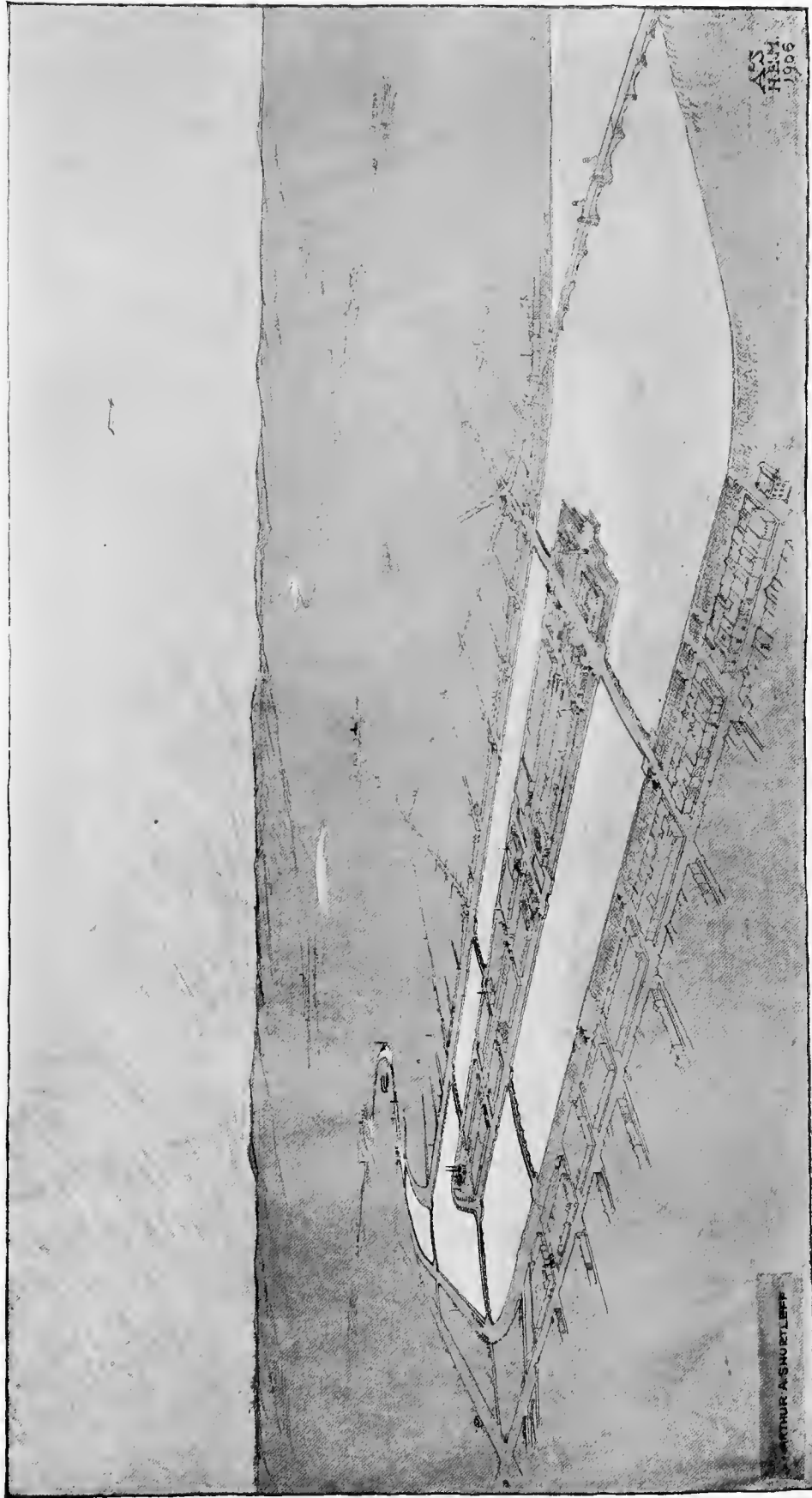


FIGURE 39. Plan No. 2, for an Island in the Charles River.





problems of municipal government. There is a demand for some kind of unification of administration for the entire Metropolitan District. Should a satisfactory scheme be worked out to this end, here would be found a proper site for the executive and legislative departments of the metropolitan government. The westerly end of the island would form an ideal location for the proposed cathedral of the Episcopal Church, and none more convenient and distinguished for such a structure could suggest itself. Here, also, might be built both hotels and apartment houses, churches, and various charitable and educational institutions, together with private houses, while stores and shops might be provided for along the line of Massachusetts Avenue. A metropolitan opera house and theatre might also be erected here.

There are no material difficulties in the way of such a project, so far as construction is concerned. The actual building area of the accompanying plan is 1,750,000 square feet.

It is difficult to see wherein such an island would result in any disadvantages. The current in the stream would be greatly improved, the rowing course would be preserved intact and greatly bettered, and all the land on the other side of the Charles River would be improved in value. One million feet of land improved with buildings would become available for taxation, while the city would acquire an element of distinguished beauty that would have a distinct pecuniary value.

In the matter of transportation there are many possibilities which would result in bringing the island into close contact with the rest of the city. The Boylston Street subway might be continued through Massachusetts Avenue to Beacon Street, where it would drop below the bed of the river, pass under the island, and rise again to the surface in Cambridge. At the level above this would pass the proposed Beacon Street line under the present north embankment of the river, while a circuit railway would pass entirely around the perimeter of the island. If the Beacon Street subway were kept as an express line, the island would be within five minutes' travel of Park Square. Another possibility would be an abolition of the present freight line through Cambridge, the dropping of the Boston & Albany tracks at Allston and their continuation diagonally under the river and directly below the open square on the island, a large central railway station for passengers being provided below grade at this point; thus the New York, New Haven & Hartford and Boston & Maine systems would be brought into touch, so that there would be a through line of communication from New York and the West to Maine and Canada. Lines of motor boats from the new dam could give water communication up and down the river, tying the island, Boston and Cambridge more closely together.

The opportunity for a feature of extraordinary beauty which is offered by the present unimproved basin is one which should not be lightly disregarded. Any city in Europe, even the smaller, would seize on such a chance with avidity, and it is greatly to be hoped that Boston may appreciate the unique opportunity that confronts it, and make St. Botolph's Island an actuality.

The accompanying plan is offered simply for the purpose of indicating the possibility of an island. The dimensions of the Cité in Paris have been more or less closely followed. An island of this size would leave a 750-foot waterway toward Boston, and a 450-foot waterway toward Cambridge, but its shape and dimensions might be changed after more prolonged study.

The second design is thus described by its author (see Figures 37 and 39): —

The need of communication between Cambridge and Boston to stimulate commercial activity in the districts removed from the basin, and to accelerate the upbuilding and use of the basin margins, requires the construction of additional bridges. The future may require many of these

thoroughfares, but at present two are clearly needed — one at Dartmouth Street and the other at the "Cross Roads," where Beacon Street intersects Commonwealth and Brookline Avenues. Dartmouth Street, lying about midway between the West Boston and Harvard Bridges, would, if extended, exactly meet two main arteries of travel — Main Street and Broadway — at their point of junction in Kendal Square, Cambridge, and thus establish connection with Copley Square, the Back Bay and Trinity Place stations, and South Boston. Copley Square requires this northern outlet to Cambridge. A similar outlet is required at the "Cross Roads," to connect Brookline Avenue and outer Beacon Street with the Cambridge esplanade, approximately on the line of Deerfield Street. Both these bridges, on account of their great length, would be costly, and would injure the total effect of the present basin by cutting it into a series of smaller basins or panels nearly square in shape.

Were an island one thousand feet wide, extending from the "Cross Roads" Bridge to the Dartmouth Street Bridge, built in the midst of the Charles River Basin, many of the foregoing difficulties would be overcome and many unexpected advantages derived : —

1. Two waterways would be secured : one considerably wider than the Seine at Paris, and the other equal in width to the Thames in London.
2. The shores of these waterways would be sufficiently near to satisfy the eye, but the minimum distance between the opposite lines of houses would be over eight hundred feet.
3. A basin twice the size of the Binnen Alster Basin at Hamburg would remain above the island, opposite Bay State Road.

A basin three times the size of the Binnen Alster would remain below the island, opposite the rear of Brimmer Street.

4. The total present shore of the basin would be nearly doubled.
5. All bridges would be reduced one thousand feet in length, and the continuity of the relatively narrow waterways would be agreeably broken by bridging.
6. Over six million square feet of land would be reclaimed from the river.

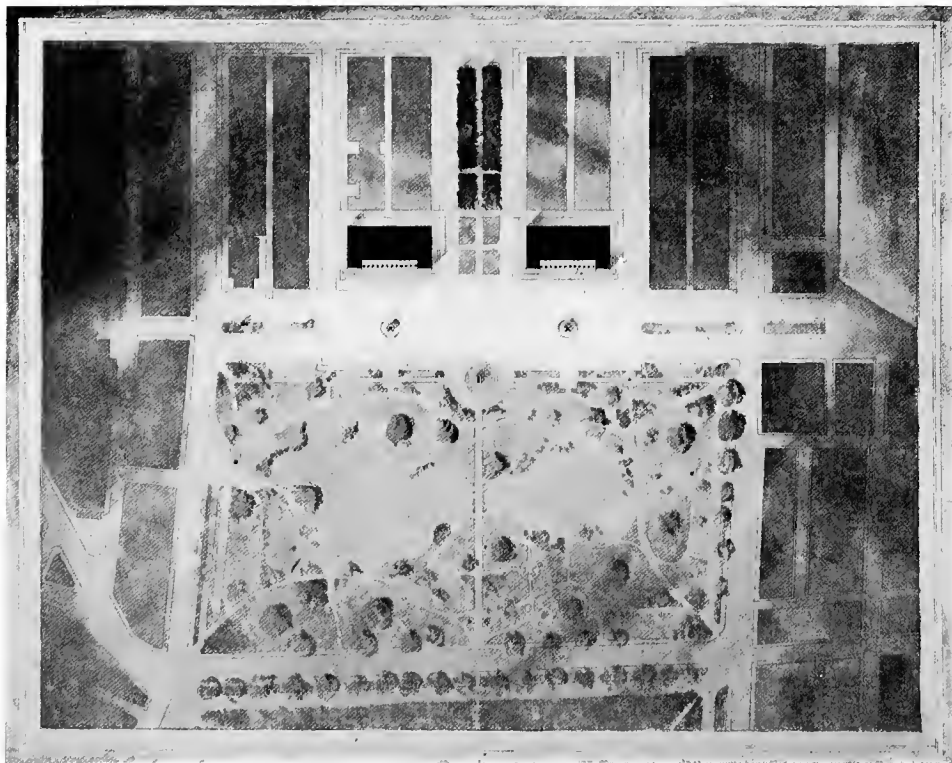
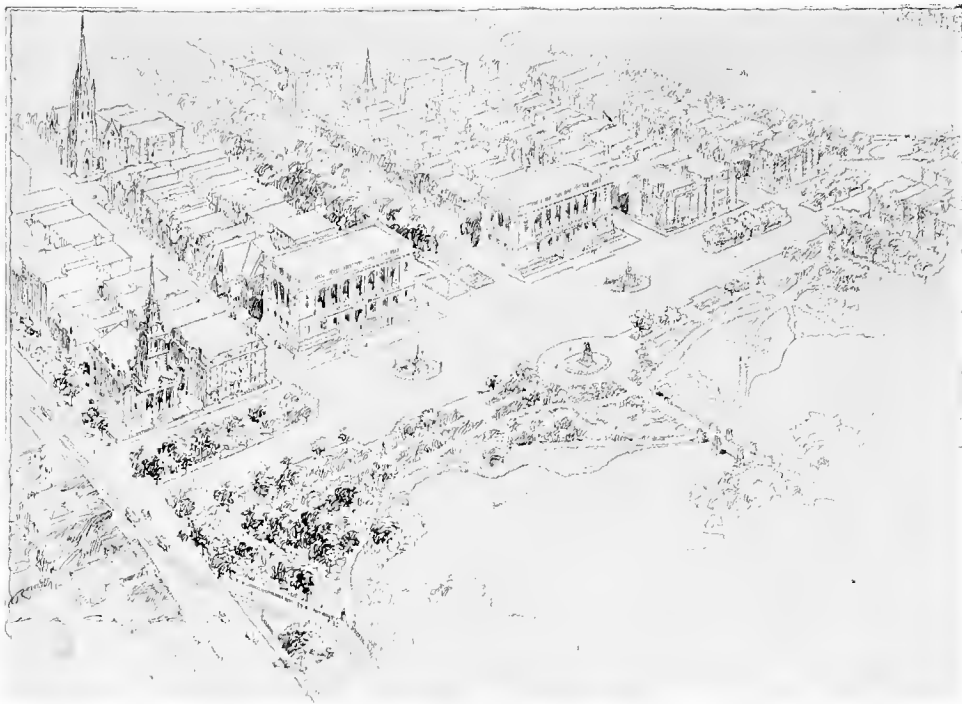
Tentative studies have been made which show that a central street as wide as Commonwealth Avenue could be constructed along the centre of the island and leave ample space on each side for two rows of lots, each one hundred feet in depth, without encroaching upon a continuous waterside esplanade one hundred and fifty feet wide encircling the entire island. This central street would be several hundred feet longer than the portion of Commonwealth Avenue between Massachusetts Avenue and the Public Garden, while the esplanade would be nearly three times that length. Two canals crossing the island are suggested to accommodate the passage of boats between the two main branches of the river.

The almost unparalleled sites which this island rising from the divided waters of the Charles would offer for public buildings, churches and dwellings, need hardly be mentioned to be appreciated, and it is certain that the value of any property within view of the island could not fail to be enhanced by its presence.

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The third plan presented is based on the idea that the formation of an island, with the hope of profiting by it as real estate, is a doubtful experiment. The expense of building a park-like island in the basin by dredging and filling would not be very great, and the saving in the cost of future bridges would go far towards the cost. Such an island would embellish the river park and might be the site for a few buildings, such as restaurants or boathouses or a summer theatre.





FIGURES 40 AND 41, Sketch for the Improvement of Arlington Street.

### **A Suggestion for the Improvement of Arlington Street.**

A member of our committee thus describes the scheme that is shown in Figures 40 and 41.

Arlington Street is widened from Newbury, on the south, to Marlborough, on the north, into a square, by extending the street surface eastward to the base of the Washington statue, and westward a few feet beyond the present building line. From the southern end of the square so formed, a second street, the same width as Arlington and twenty feet further to the east, is carried to Boylston Street on the south, and to Beacon Street on the north, thus leaving an island with grass and trees opposite the block between Boylston and Newbury Streets, and another opposite the block between Marlborough and Beacon Streets. Northward, on the opposite side of Beacon Street, an opening and parkway is made, reaching to the Charles River embankment, of sufficient width to handsomely connect the park system of the Common and Public Garden with the parkway along the river. From Boylston Street, opposite the axis of the square, it is proposed to extend Arlington Street on to the southern part of the city. The two blocks bounding the square on the west offer building sites of approximately the same front as that of the Public Library, by suppressing the alleyway which now runs through to Arlington Street. Buildings along Commonwealth Avenue are limited by law to a height of seventy feet. If buildings of a public nature were erected on these sites facing the Arlington Street square, — which might then be called, by virtue of the statue of the first President, which would look down into it, "Washington Square," — they might, by express provision, be carried to a greater height than the buildings along the avenue, and thus gain in monumental impressiveness. In front of them, on the axis of the square, would be placed large fountains, and monuments at proper scale might be grouped about the square, as around the Place de la Concorde in Paris.

Three important reasons exist for this improvement. The first is to give a glimpse of Charles River from the Public Garden, and to furnish a free and attractive passage for the sight-seer from the heart of the city to its riverway.

The second reason is to furnish Commonwealth Avenue with a proper termination. The present arrangement is lacking in dignity, and the superb effect which might be had by bringing the equestrian statue of Washington into an effective prominence is now entirely lost. The presence of public buildings flanking the entrance to Commonwealth Avenue from the Garden, together with the embellishments to be placed in front of them, would greatly enhance the dignity of the avenue, and the result would be a public square which, although modest in dimensions when compared with the great squares of Europe, might rival them in beauty.

The third reason is to provide a place for the marshalling of large bodies of civilians or soldiers on civic occasions. At present, most of the processions through the city are formed in that region, and this work would be greatly facilitated by the creation of the proposed square.

In conclusion it may be pointed out that this improvement in the main involves little expenditure and interferes in no important respect with the beauty of the Garden, nor does it displace any existing monument.

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### **A Suggestion for the Extension of Arlington Street and for a Public Building Site at Castle Square.**

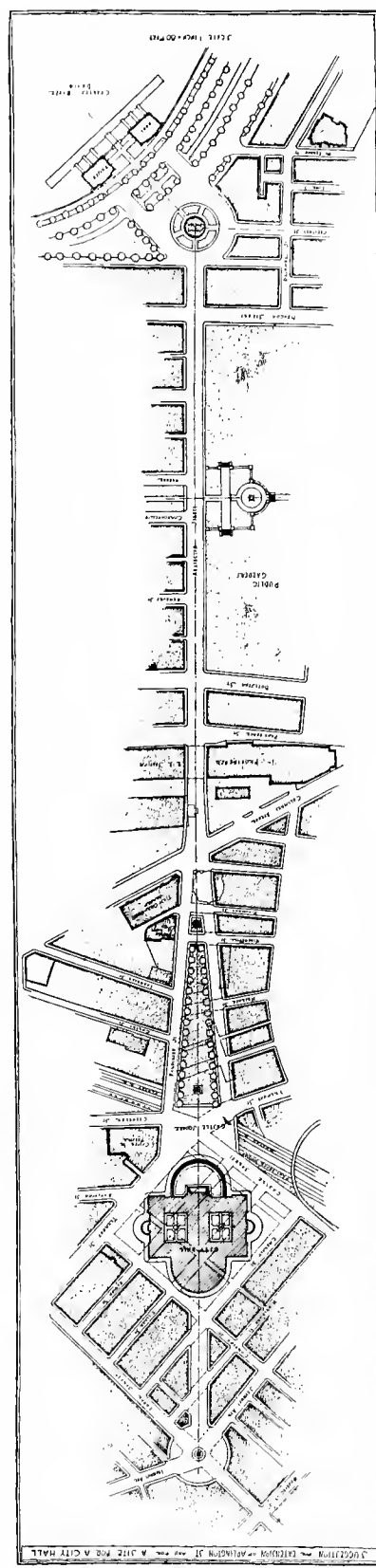
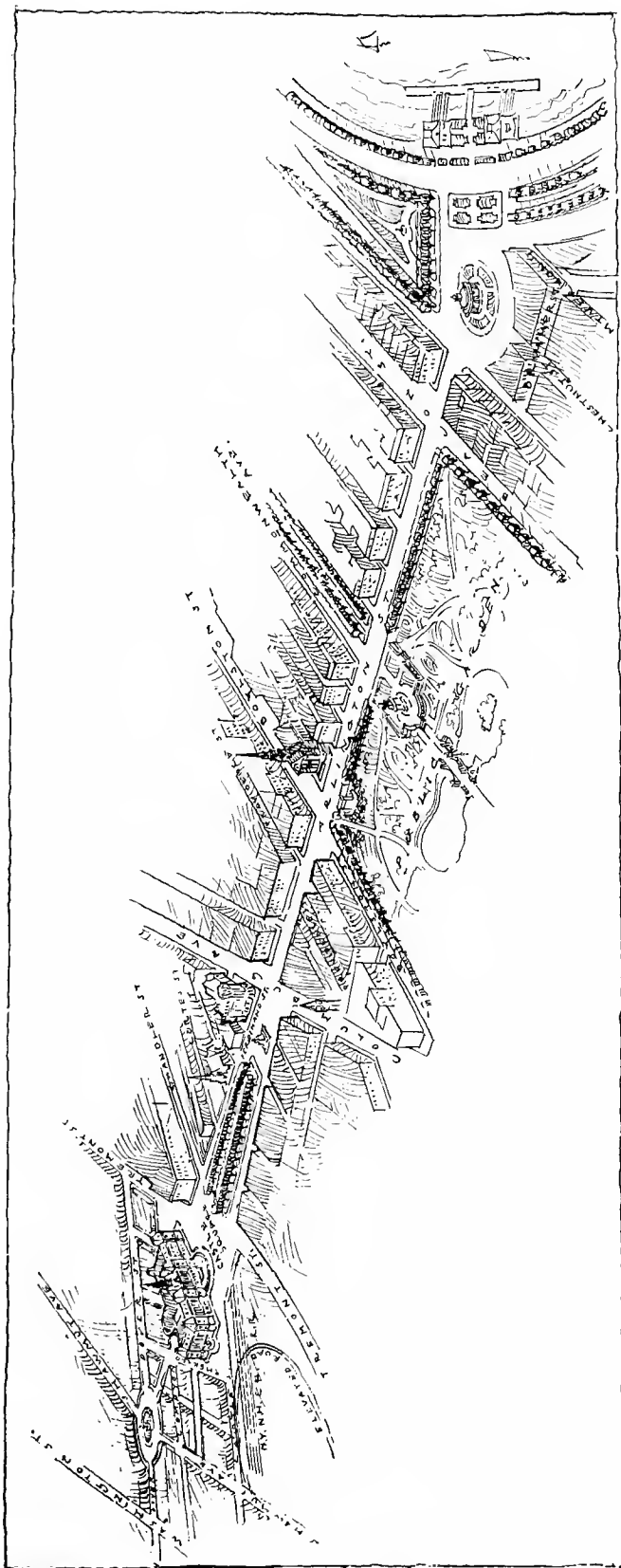
The following description will explain Figures 42 to 47 : —

The extension of Arlington Street, both towards the north and the south, has often been suggested, and is a simple, obvious and desirable improvement. The plan herewith presented shows Arlington Street extended northward to join the river drive. At the junction with this



FIGURES 42 TO 45. Present Conditions on the Line of Arlington Street Extended.





FIGURES 46 AND 47. Sketch for Arlington Street Extended and for a Public Building Site at Castle Square

drive is a plaza, in the centre of which stands a subway station of the line that will follow the river and pierce Beacon Hill.

Opposite Commonwealth Avenue another plaza is formed by the omission of the iron fence against which Commonwealth Avenue now abuts, and the substitution of stone balustrades encircling the statue of Washington. From the terrace thus formed there are openings towards the bridge in the Public Garden and steps to the surrounding paths. By such simple and inexpensive expedients a very grand and suitable termination would be made for our handsome avenue.

The extension of Arlington Street southward from Boylston Street is blocked by existing old houses and by about ten feet of frontage of a new building. If Arlington Street is extended through these, the sides of those estates that would thus face Arlington Street extended would become as good as the frontages on Boylston Street, and the improvement thus effected in these estates would go far to balance the cost.

Beyond this obstacle occur the Providence passenger and freight stations. For the development of these properties streets are inevitably necessary, and none could be better than this. Still further south Ferdinand Street is met. The buildings on the west of this street—the Cadets' Armory and the Reformed Presbyterian Church, etc.—would remain as now. The gasometer and Swedish Church on the east side would vanish, but beyond this, as the illustrations fully show, there is surprisingly little of value existing on the west side. In fact, the existing buildings are of very slight value. Through this neglected neighborhood Arlington Street is shown on the plan as widening in a park-like manner until, on reaching Castle Square, a large public place is formed at little expense by bridging the railroad in that vicinity. At this point over the railroad the land is high, the rise being gradual from Boylston Street. On this stately site it is suggested that a large area be taken for a public building. The land lying between Castle, Tremont, Compton and Emerald Streets is assessed now on a valuation of \$1,129,300, and a smaller lot might suffice. It is close to several subway and elevated stations and surface routes. It is on land and surrounded by land that at present is not of high value, but the commercial value of the whole region would be greatly raised by the action here suggested. In spite of the depressed condition of this real estate the site really is very central, being easily reached from all parts of the city, and the plan shows how a slight extension of Arlington Street beyond this site would meet the junction of Dover Street and Shawmut Avenue, whence the road to South Boston and Dorchester is open by way of Dover Street.

Two very similar sites exist where Dartmouth Street or Berkeley Street strike Tremont Street, but neither of these bring into market, as this scheme does, large areas of unoccupied territory, nor has either of these sites the commanding position which is given by the rise of the streets to cross the railroad at Castle Square.

As a scheme for opening up much undeveloped land and the possible creation of taxable property around a new civic centre, and for gaining a commanding site for a public building on land that is comparatively cheap, but which is close to other populous and busy centres, this proposition seems worthy of consideration.

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### **Site of the Old Station of the Boston & Providence Railroad Company.**

Many different studies for the utilization of this property were laid before this committee, and indeed there is no part of Boston that to-day calls more loudly for study and intelligent improvement than these acres of unimproved land in the very heart of the city. None of the designs thus presented seemed to us fully satisfactory. In general, this failure resulted from the belief held by each designer that a public building, such as a city hall, should occupy so large

and clear and prominent a site. It, however, is apparent that this site becomes suitable for such an important building as a city hall only when very wide openings are cut through the block on Boylston Street and such as would open the building up to the wide foreground of the Public Garden.

In fact, not only should there be easy access from a public building on that site to the Gardens, but to open up the station property even for business purposes, some ample openings are needed from Boylston Street to and across the station property.

At present there are no thoroughfares north and south from Berkeley Street to Park Square. The railroad property and all the city towards the south beyond it is as inaccessible as if it were far distant from commercial centres. Hence there should be wide and spacious streets running south from Boylston Street at least as often as at Arlington Street and Church Street, even though to make them would sacrifice valuable property on Boylston Street.

The plans for development submitted to us were unsatisfactory, probably because they were ambitious where this very simple though somewhat expensive treatment seems to be the more proper solution.

A pamphlet has lately been circulated in Boston which gives admirably the history of this at present unproductive property. All may not agree with the writer in seeing a real estate speculation by the railroad company in this idle real estate, but he puts the case so clearly that we take the liberty of outlining his argument here.

He calls his pamphlet "A Blight on Boston." The tract formerly used for railroad purposes by the Providence Railroad Company covers 16.61 acres, and the taxes on it for the current year are \$72,000. During the seven years since the land was abandoned for railroad purposes \$400,000 has been paid in taxes, and the income from the property during this time must have been slight.

Meanwhile the tide of business has surged out Boylston Street from Park Square by a block 120 feet deep, having the Public Garden on one side and the abandoned land on the other.

Accordingly, at Church Street, valuation on the corners of Boylston Street has advanced since 1896 from \$35 to \$48 and from \$42 to \$85, and a little way down Church Street from \$20 to \$35. On the other hand, at the corner of Church Street and Columbus Avenue, just across the station site, they have fallen from \$14.25 to \$12.50, and from \$14 to \$13.

At the corner of Boylston and Berkeley Streets, in the same time, the valuation has advanced from \$17.50 to \$40.

This statement of the case indicates clearly how seriously this vacant land prevents the natural development of the city. The writer further shows how this barrier prevents the growth of Tremont and Washington and other streets leading to the South End, and he makes it evident that the city generally would be benefited if the space were traversed by streets.

None of this tract was taken by eminent domain. All was bought and paid for by the Providence Railroad, but after various changes the care, management and control of the land became absolute in the New Haven Railroad in 1904, and the boundaries remain substantially the same as they were when the land was abandoned seven years ago.

The writer of the pamphlet argues that if the payment of the taxes, unbalanced by any returns, appeared as a diminution of the dividend, the shareholders would at once object, but that as the expenditure merges in the total of "fixed charges," it is not noticed. He says that as rates are raised when the fixed charges are increased, and as the public pays these rates, then it is the public that is paying the cost of carrying this vacant land and not the stockholders; or else needed repairs are deferred, so that the community is paying for inferior service, and thus, in either case, the public pays the cost, and the railroad carries for years this dead, unproductive land which cannot be used for railroad purposes, and which, under the system of handling, does not earn its keep. The writer's opinion is that such holding of vacant land to the detriment of

the community is not within the rights and privileges granted to a railroad, or within the duties a railroad assumes towards the public.

It is quite out of our province to determine whether this view is correct, but all will find in the pamphlet a clear statement of the way in which this unoccupied land prevents the natural growth of the city, and, without criticizing the present owners, we cordially hope that the wasteful conditions may be soon terminated.

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### **Improvement of Copley Square.**

The design for the improvement of Copley Square shown by Figures 48 and 49 creates four grass plots arranged symmetrically upon the axes of the Museum of Fine Arts and the Public Library. The present streets form the outside boundaries of this plotted area and two diagonal avenues cross the centre of the square. It is proposed to pave this centre and the avenues with granite blocks set in patterns. The grassed areas, planted with low shrubs and trees and surrounded with sidewalks, are to be decorated with curbs, lamps and fountains.

Provision is made at the north side of the northerly plot for possible entrance to a subway. The object of this plan is to create a symmetrical treatment of the square, control the direction of traffic on its surface and mitigate the possibilities of dust and the radiated heat which would result if the surface were wholly of pavement.

Another suggestion for the treatment of the square is to recognize the diagonal of Huntington Avenue unchanged and to break the larger of the two existing triangular plots into two portions, one of which, a small triangular plot, is placed upon the axis of the Public Library; the other, a larger plot of irregular shape, complements by its curve the outline of the property of the Boston Museum of Fine Arts opposite. (See Figure 49a.)

A third suggestion is to pave the whole square with blocks of granite of various colors, arranging in a symmetrical manner "islands," for the protection of pedestrians, which are to be made decorative with fountains and lamps. It is proposed that the car tracks should run as at present.

Still another suggestion, dependent upon the extension of the subway to the square, is to remove the diagonal run of car tracks and place in the centre, within a decorated enclosure, a covered entrance to the subway, the square to be paved with granite blocks as previously suggested.

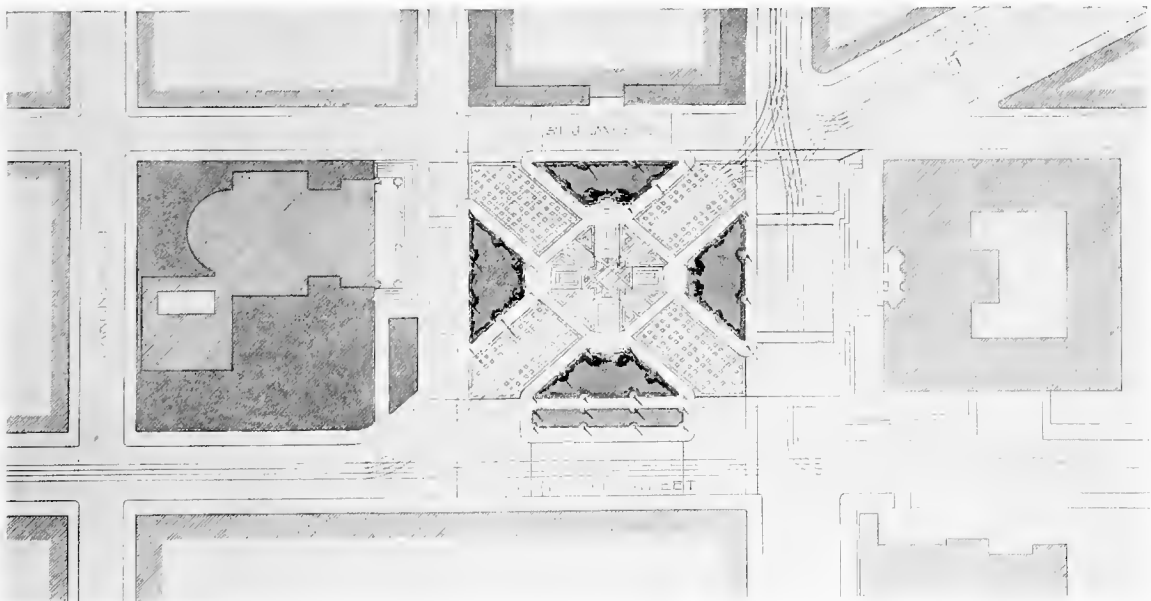
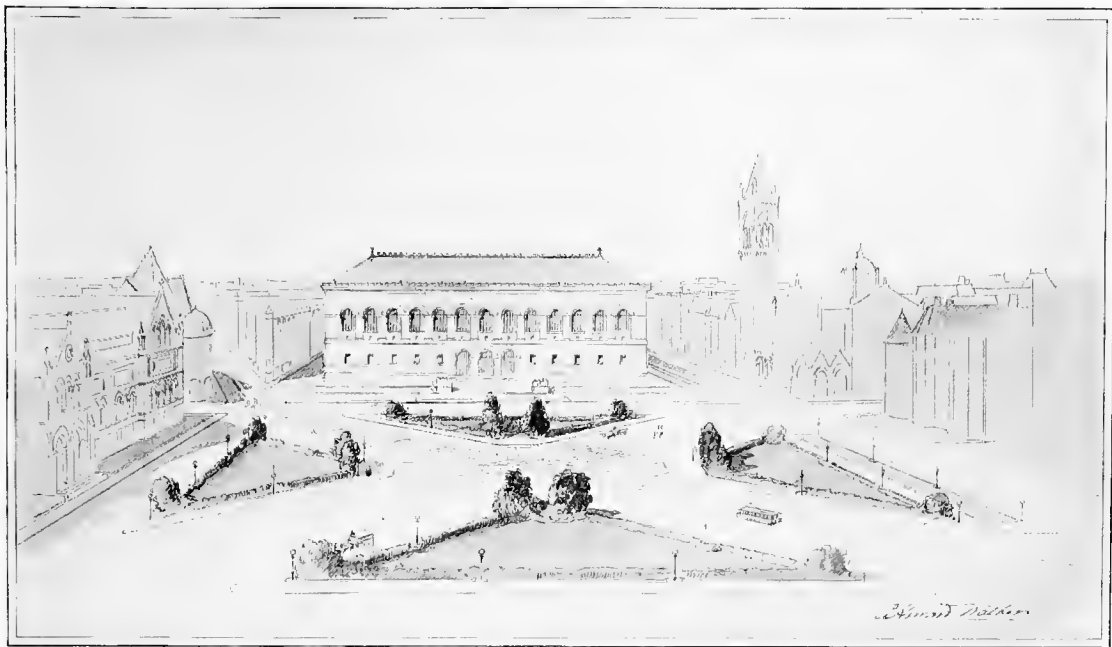
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### **The Widening and Extension of Commercial Street.**

It is generally admitted that there is need for a direct teaming thoroughfare across the old city. Of the many schemes that have been offered at different times, perhaps that of extending Commercial Street is the best, and therefore record of it is made here. This involves the widening of Commercial Street between State Street and Clinton Street to a width of 100 feet, by taking off on the westerly side and opening up a new thoroughfare 80 feet wide from Clinton Street in a direct line to Keany Square, at the end of the Charlestown Bridge.

One hundred and thirty-three estates would be taken, either in whole or in part, which contain about 211,000 square feet, the assessed values of which, in 1903, were about \$2,450,000, or an average of \$11.61 a foot. About 129,000 feet would be required for the street, leaving 82,000 feet for sale.

The total length of the new street would be 2,425 feet, including an area of 194,000 square feet, of which 129,000 feet would be taken from private owners and the balance from existing



FIGURES 48 AND 49. Design for the Completion of Copley Square.

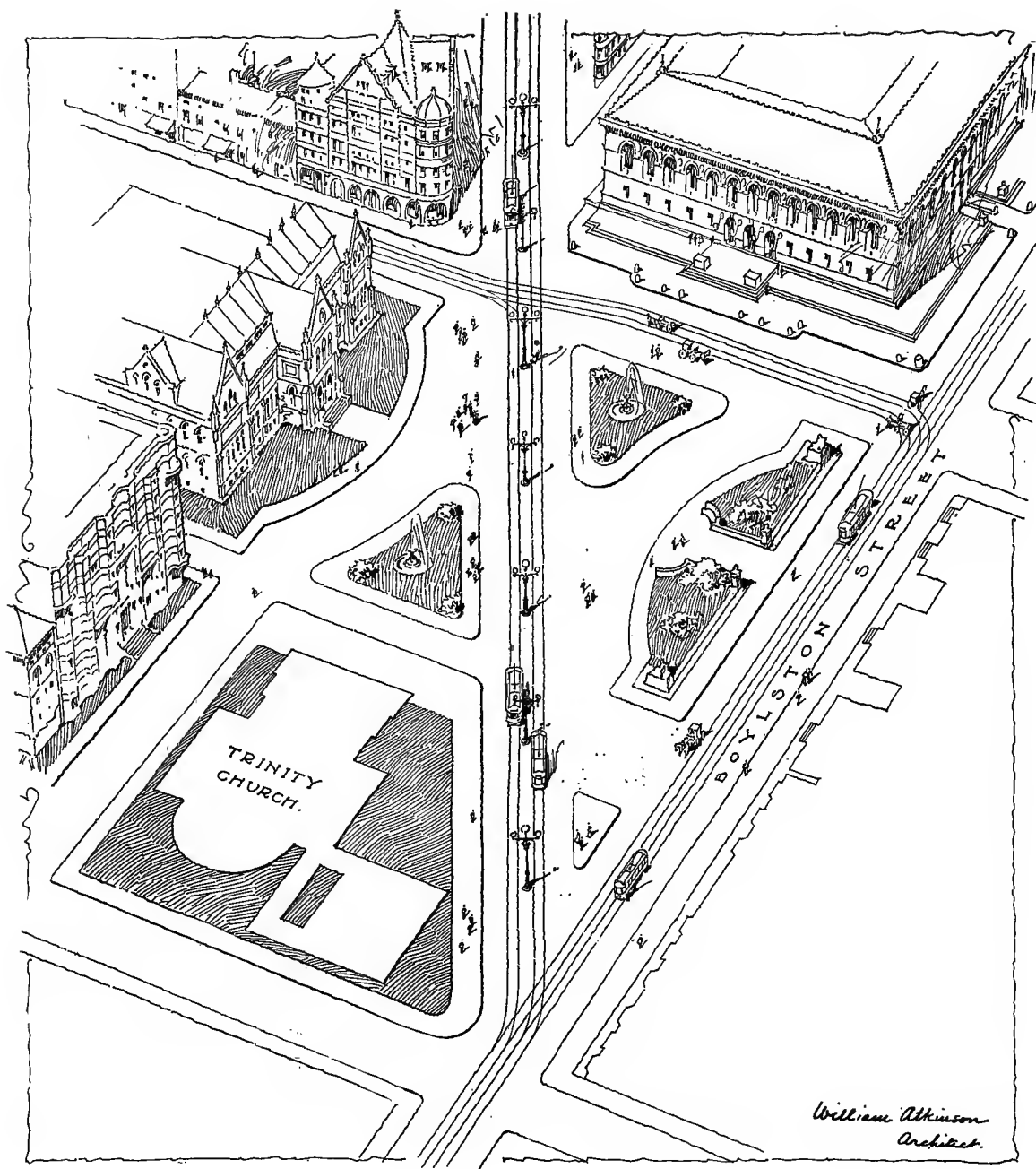


FIGURE 49 (a). Design for the Completion of Copley Square.







FIGURE 51. Plan for the Improvement of Dorchester Heights.

streets, courts, and places. From Clinton Street to State Street is an additional distance of 500 feet, and there would be four estates affected, from which about 6,000 square feet would be taken, making a total of 135,000 square feet taken from private owners, at an estimated cost of about \$2,600,000. The total length of new street to be built would be about 3,000 linear feet, and the surface to be covered would be about 244,000 square feet. The total estimated cost for the land and the construction of the streets would be about \$3,000,000.

This project was reported by the Boston Real Estate Exchange to the Associated Board of Trade, and received the favorable consideration of the Committee on Traffic Congestion.

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### **Better Connection Between Cambridge and Causeway Streets.**

When the elevated railway is connected with Cambridge Bridge, it is proposed to widen Cambridge Street, presumably to the width of the bridge, 105 feet, up to and beyond the entrance to the subway. It is suggested that a street at least 80 feet wide should connect Causeway Street either with that point on Cambridge Street where the subway disappears in the ground, or with the corner of Charles and Cambridge Streets, where the elevated road will still be overhead.

The present approach to Causeway Street and the North Station from this direction is circuitous and through narrow streets. Land and buildings in the neighborhood are not of great value, and, relative to its utility, the expense of such a thoroughfare would not be great.

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### **The Proposed "Old Colony Avenue."**

A thoroughfare has been proposed by citizens at the southern part of Boston which deserves general attention. Dorchester needs an entrance into Boston, and this can be obtained without great expense by constructing a boulevard, starting on Dorchester Avenue, at the end of the new Cove Street bridge, running out Dorchester Avenue, where the property is at present of small value, to the old roadbed of the Old Colony Railroad Company, which is owned by the city, continuing over this roadbed to the Columbia Road bridge, through the arch of this bridge and along the east side of the railroad through Harrison Square to the Neponset River. Such an avenue would not only be a benefit to Dorchester, but would give the business and pleasure traffic of the South Shore a much-needed way to the heart of the city.

A petition and bill, requesting that an avenue substantially as described be built by the Metropolitan Park Commission, have been duly presented to the Legislature, and have been referred to one of its committees.

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### **Improvement of Dorchester Heights.**

The heights where Washington planted the cannon that drove the British army from Boston form the highest and most conspicuous site in South Boston. Once a large reservoir covered the eastern half of the top of the hill. This was removed, and on the low site thus formed to the east of the hill the South Boston High School has been built. The western wall of the reservoir still is left as a retaining wall behind the school, and above this wall is a beautiful park with fine trees and having an extensive prospect. The white marble tower which commemorates the evacuation of Boston stands on this height, above the reservoir wall and almost on the axis of the school. The steep space between the school and the tower is at present in an unfinished state.

The School House Commission have caused a plan to be prepared for terracing this slope. The old reservoir walls would be utilized, and, at slight expense, a very agreeable background for the school and base for the monument would be formed. Visitors would have fine prospects of the harbor from the seats and paths on this terrace. (See Figure 51.)

Towards the west a mall runs from the monument across the park under fine elm trees. The suggestion is made by one of our members that in continuation of this vista Telegraph Street be widened in the manner shown in Figure 50. This would give a splendid approach to this exceptionally fine and historical site and would connect it with and make it the starting point of the "Inner Boulevard," elsewhere suggested in this report.

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### Communication by Inland Waterways.

Such has been the development of the railroad system in America that in recent days commercial activity on canals or rivers has seemed a thing of the past, suited, perhaps, to the needs of China or Holland, but not to those of an up-to-date and active community. When the land was first covered with a network of railways, canals naturally received less attention than transportation by rail. The canals also were small and the tendencies of the railroad companies was to suppress them. Hence, it is a generally accepted idea that railroads have superseded inland waterways and that the latter will never again be useful to commerce.

The immense trade which passes in this present day through the great lakes on our northern border would tend to disprove this proposition, were it not of a character and conducted at a scale that resembles and almost surpasses that on the ocean. There are, however, signs that we have not finally disposed of the subject of canals. Even in our own country we have seen within a few weeks a convention assembling in Washington to discuss the improvement, not only of our harbors but of our rivers, and to urge large annual appropriations by Congress for this purpose; and one of the schemes most prominently set forward for such assistance was a better water communication between Lake Michigan and the Mississippi River. The State of New York is entering upon a vast scheme for enlarging and deepening the Erie Canal. An Army Board has just reported on a plan to improve navigation on the Connecticut River between Springfield and Hartford, by dredging the river and using a portion of the existing canal above Windsor Locks. The canal across Cape Cod promises to be an accomplished fact within a few years, as does also the great canal at Panama. The canals at Cape Cod and Panama merely shorten sea routes; the others feed and develop inland commerce. But this general activity shows that the carriage of goods by canals may be still a subject of public interest.

The importance to commerce of inland waterways has nowhere been recognized so clearly, and nowhere has it led to so much energetic construction, as in the German Empire, and Mr. Elzbacher, in his book "Modern Germany," thus sums up the advantages which recommended canals to Germans.

The freight car itself, reckoning per ton of capacity, is five times more costly than the same room in a barge. It takes four to six times more energy to haul goods by rail than on water, and thirty to fifty times more to haul it on a road, and hence, "the propulsion by water, whether the motive power be horse traction, steam or electricity, is only a fraction of the cost arising from propulsion by rail." The canal itself costs less than the railroad and can carry more traffic. Hence, owing to its very nature, land transports cannot possibly compete with properly equipped waterways. Besides, canals give not only cheap transport but an alternative transport system to compete with railways, and which is entirely satisfactory for freight that need not be delivered speedily, such as coal, lumber, etc.

Germany's industrial success is doubtless due, to a large extent, to the assistance received from her waterways. In 1902, notwithstanding the marvellous growth of the German merchant marine, its inland shipping has grown to be 150 per cent larger than the tonnage of its sea shipping, and this increase is, to a great degree, in vessels of large size. The average size is from 200 to 400 tons on the minor waterways; on the Elbe 1,000 tons and upwards; and on the Rhine barges of 2,000 to 2,350 tons may be seen. The Rhine-Elbe Canal, the Danube-Oder Canal and the Danube-Elbe Canal are enterprises which would require an outlay of about \$50,000,000 each.

The Rhine has been changed from a tourists' river to a channel of commerce, \$5,000,000 having been spent on it during the last twenty years; and Cologne, which is 150 miles from the sea, now runs thirty-four steamers to England, Russia and Scandinavia; and on the canals and rivers of Germany commercial and industrial activity is developing with marvellous rapidity.

In France inland commerce by canals has always held a place of importance. England was once interlaced with canals, but the building of them ceased with the arrival of railroads in 1830, and by degrees the railroads gained control of them and made them harmless rivals. They were built for small barges, and to-day economy is found in moving large barges. Now, however, that English railways are overloaded with freight, a new interest is aroused lately in English canals, and a Commission is considering the enlargement and development of them on lines similar to those adopted in Germany.

It is strange that railroads during these latter years have so entirely absorbed the attention of a country traversed by rivers like the Mississippi, the Missouri, Ohio, Hudson, Connecticut, Merrimac, etc. When the Mississippi was full of shoals and snags and without lighthouses, it carried great freights. Now, although it is cleared and lighted, it finds profit only in freighting with the current, and return cargoes are difficult to obtain. During the War of the Rebellion this great river was a most useful channel and carried northern gunboats to great victories. During this war, in June, 1863, a great national Ship Canal Convention was held in Chicago expressly to discuss this subject. It then was a question of uniting the Gulf of Mexico with the Atlantic Ocean by waterways navigable for gunboats. The objects in view were to augment national wealth, to attract population, to facilitate transportation, and for military defence in any naval contest on the Lakes. There had recently been disagreement with Great Britain, and it was feared that she might place gunboats on the Lakes through the Welland Canal, though we had no such facilities. It was proposed to open the Mississippi, connect that river and Lake Michigan by the Illinois River and a canal, and finally increase the size of the Erie Canal and its locks.

In our day there seems to be a possibility of these schemes being carried to conclusion, for the Erie Canal is definitely to be enlarged, and the Illinois River canal is strongly urged. When the circuit is complete it may become as profitable to carry freights up as down the Mississippi, and there will be something gratifying to national pride if it ever does become possible to thus carry cargoes without trans-shipment from New Orleans through the interior of the continent and on to the Atlantic Coast.

The opinion that there is a future for such American inland waterways is shared by many people. President Roosevelt says "one of the effective methods of affecting railway rates is to provide for a proper system of water transportation," and Mr. James J. Hill says, "There has been no subject before Congress in twenty years which interests so many people and will prove so great a benefit to the entire basin of the Mississippi and Missouri Rivers as a fifteen foot channel or canal from St. Louis to the Gulf of Mexico."

Massachusetts has had many dreams of commerce by water through the interior of the State. The canal which united Boston Harbor with the Merrimac River at a point near where Lowell now stands was one of the earliest built in the country. It brought freight and passengers from New Hampshire, and logs from the forests floated down its waters to Boston. The same

Loammi Baldwin who had a great share in that undertaking also assisted in studies for others in this neighborhood. To connect Boston with the Connecticut was one end sought, and in 1826 elaborate reports were made to the Legislature, outlining in detail the different routes by which this could be accomplished and how the necessary reservoirs of water might be obtained. From Springfield it was intended that commerce should go down the Connecticut and thence to New York. These reports, however, were still further extended, and considered the prolongation of the canal westward from the Connecticut to Albany and the Erie Canal passing under the Hoosac Mountain by a tunnel. It is interesting to read in these reports and in the newspapers of the day the statistics of the amount of shipping then taking the long journey by sea from Boston to Albany, which would have been superseded by this canal.

This review of what is actually doing abroad and of what has in the past been dreamed of here makes one consider whether there is not a lesson here set for Boston. It is often said that now that Boston has no communication to the West that is controlled in her interest, that she is out of the race and bound to decline. It is said she is at a "dead end" of the country. In the days of the Embargo, Boston, once a seaport, suddenly became a manufacturing centre, to her great material advantage. After the Rebellion another course was adopted, when prohibitive laws continued the annihilation of Boston foreign shipping that had been begun by the Alabama. Boston then invested her resources in western lands and railroads. This benefited individuals, but resulted in no permanent local advantage to Boston. Possibly the course before Boston now is to develop to the utmost her own resources. Perhaps she is in the very same position as those European cities which find that the only way to maintain and increase their commerce is to offer the greatest facilities and to see that lines of cheap transportation radiate from them in every direction.

It appears that the Cape Cod Canal is now really to be built. That will be a great thing for Boston. It is an agreeable thought that a night boat from Boston to New York may take the place of a night train, and if the fogs and currents off Cape Cod are a cause of dread to the summer yachtsman, we can imagine what it will be for coasters to escape the winter passage through them. But, after all, this service is only to shorten the distance between Boston Bay and the waters south of the Cape. Another enterprise which would encounter few natural obstacles in its construction, and which is at times brought before our Legislature, the Taunton and Fore River Canal, would answer an entirely different purpose. It would not serve great ships, but tows and barges, propelled perhaps by electricity, would enter it, and coal and supplies would be carried on it without breaking bulk from the original port to Boston, passing through an interior country, where now, without these aids, exists a prosperous manufacturing region, and which might become one continuous manufacturing town, all tributary for its metropolitan life to Boston.

Many of our citizens live in summer on the shores of Salem Bay and see numberless tows, carrying thousands of tons of coal, constantly pass to Salem. There the coal is dumped in great piles on the ground. Thence it is transferred to cars and pays tribute to the Boston & Maine Railroad before it is landed at the boilers in Lowell or Lawrence. Many must wonder at this costly and primitive method of attaining an end. If we were in Germany surely the Merrimac River would long ago in some way have been availed of to carry not only coal but other supplies to these towns and all the district around them.

The time may come when the surveys made in 1826 for the State Commissioners may prove useful, and Boston may stretch other waterways up the Charles and through the interior of the State to join those even now projected at the Connecticut. Perhaps we shall realize sooner than we now anticipate that inland waterways will help to develop business throughout the country around Boston and that such development is our present opportunity.

In short, it is, we think, apparent that this subject is worthy of consideration by all those who want to see the country around Boston prosper, for this would mean prosperity to Boston itself.

### The Improvement of the Port of Boston.

This proposed improvement is thus described and it is also explained by the illustrations Figures 52 to 64 : —

It may seem extravagant to say that Boston has it in its power to make itself the most convenient and best equipped seaport in the world ; but it is believed that an examination of the conditions will not only sustain this claim, but will show that it can now be made so without any expense whatever to the city or State.

First, however, we must consider what constitutes a great modern seaport. Every one knows what the Americans have done for economical and efficient land transportation. With their hundred-ton locomotives, their trains half a mile long, and their freight cars of forty or fifty tons capacity, they can convey freight by land more cheaply than it is conveyed anywhere else in the world. Within a few years, competition has produced a similar development in ocean commerce, cost of transportation being constantly reduced by increasing the size and capacity of steamers. The two Cunard steamers just launched are each seven hundred and ninety feet long ; a Hamburg liner has just been contracted for, to be eight hundred feet long ; and naval engineers predict that it will not be many years before steamers a thousand feet long will be required to meet the demands of shippers ; and they tell us that to the seaports which can best accommodate such vessels will belong the future commerce of the world.

What, then, is the accommodation that such ships need ? The two new Cunarders are each of forty thousand tons measurement, and have, presumably, a cargo capacity somewhat greater. It is obvious that a steamer of forty thousand tons capacity cannot be economically loaded and unloaded by means of express wagons. What is absolutely essential to the profitable operation of such vessels is that trains of freight cars shall bring to their side the goods which they are to transport ; and, as a freight train rarely carries more than a thousand tons, facilities must be provided beside each steamer for delivering in rapid succession the forty or fifty train-loads comprising its full cargo. In this country hardly anything has yet been done to meet this new commercial necessity. The Reading Terminals in Philadelphia (Fig. 53), where coal cars are run alongside the barges, afford economical loading on a very small scale, and the connection of railroad tracks and steamers at Hoboken is tolerably close ; but in neither case is the system adequate to modern requirements, and it is necessary to look on the other side of the ocean for examples of what a seaport must be if it is to secure and retain the commerce of the future.

The two great rival seaports on the continent of Europe are Antwerp and Hamburg. For many years Hamburg has had a row of warehouses (Fig. 52) some two miles long, mostly bordering the two sides of an inlet from the River Elbe, each line of warehouses being served by two railroad tracks (Fig. 54), one track running between the buildings and the water's edge, and the other on the land side of the buildings. This system was almost exactly duplicated in extent at Antwerp by a long row of warehouses, also supplied with railroad tracks, on the bank of the river Scheldt (Fig. 55). The opening of the Suez Canal and the Alpine tunnels, some twenty-five years ago, threw upon the railroads of Central Europe an immense Oriental traffic, passing mostly through Genoa or Marseilles, which had formerly gone by sea to England and northern ports ; and Antwerp, which is directly on the main route of this traffic (Fig. 57), prepared to develop her commerce at the expense of her rival, Hamburg, which lies under the disadvantage of being three hundred miles to the east of the great central stream of trade. For this purpose two additional miles of quays and warehouses were built along the Scheldt (Fig. 56), equipped with railroad tracks like the earlier ones ; and, in imitation of the docks of London, then incomparably the greatest commercial city in the world, immense basins were excavated in the northern part of the town, and surrounded with warehouses and railroad tracks, connected with all the railroads



FIGURE 52. Warehouses at Hamburg.

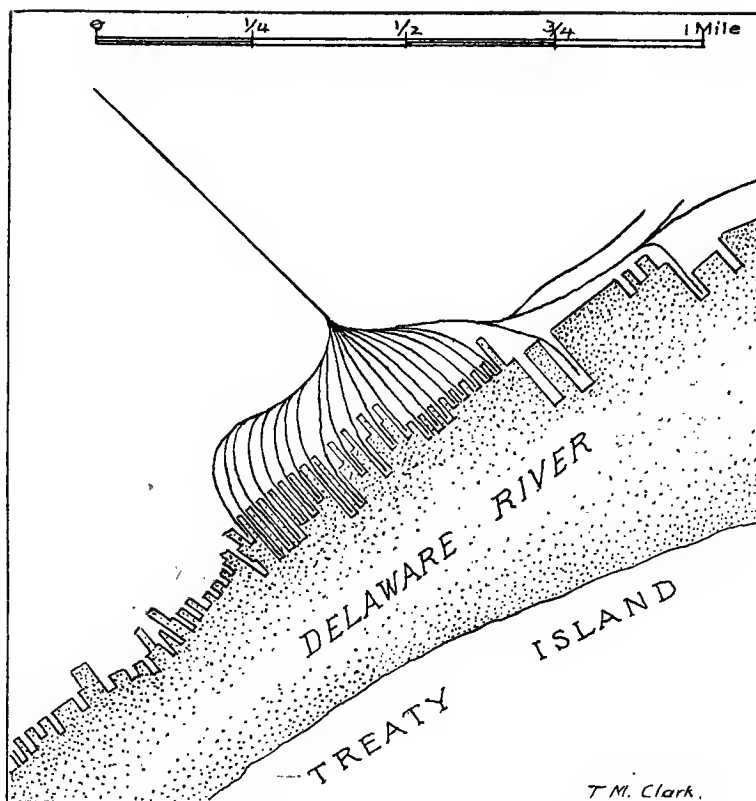


FIGURE 53. Plan of Reading Coal Terminals, Philadelphia.

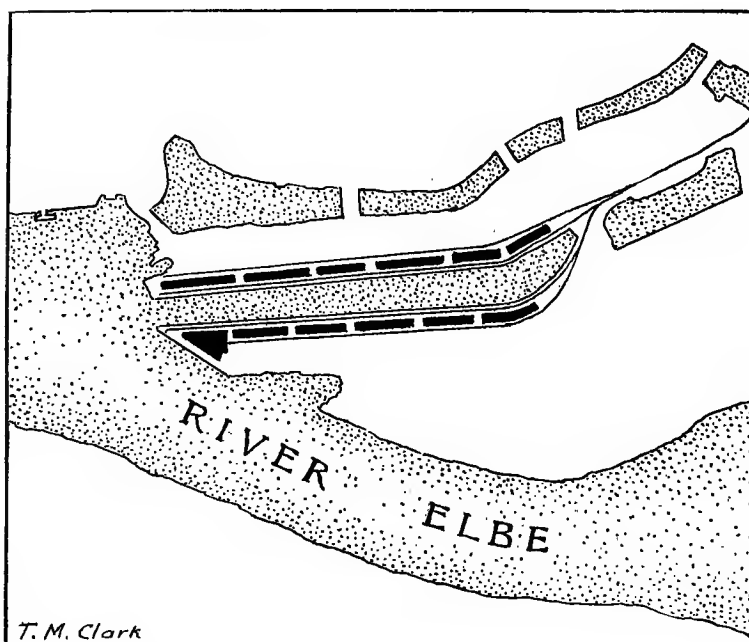


FIGURE 54. Plan of the Railroad Harbor of Hamburg before 1880.



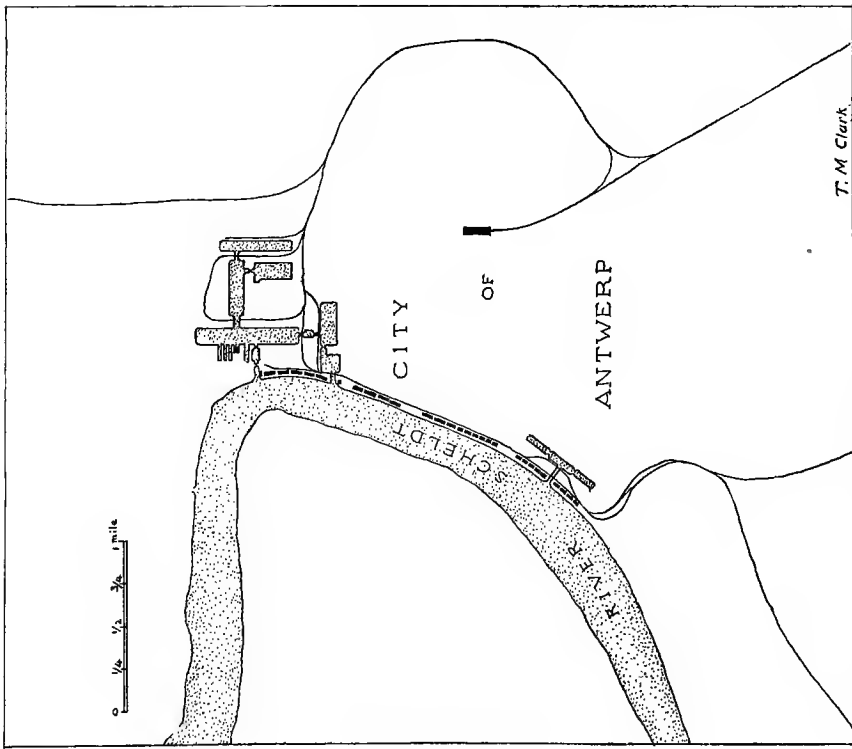


FIGURE 55. Plan of the Warehouses and Railways in the Scheldt, at Antwerp, before the Extension.

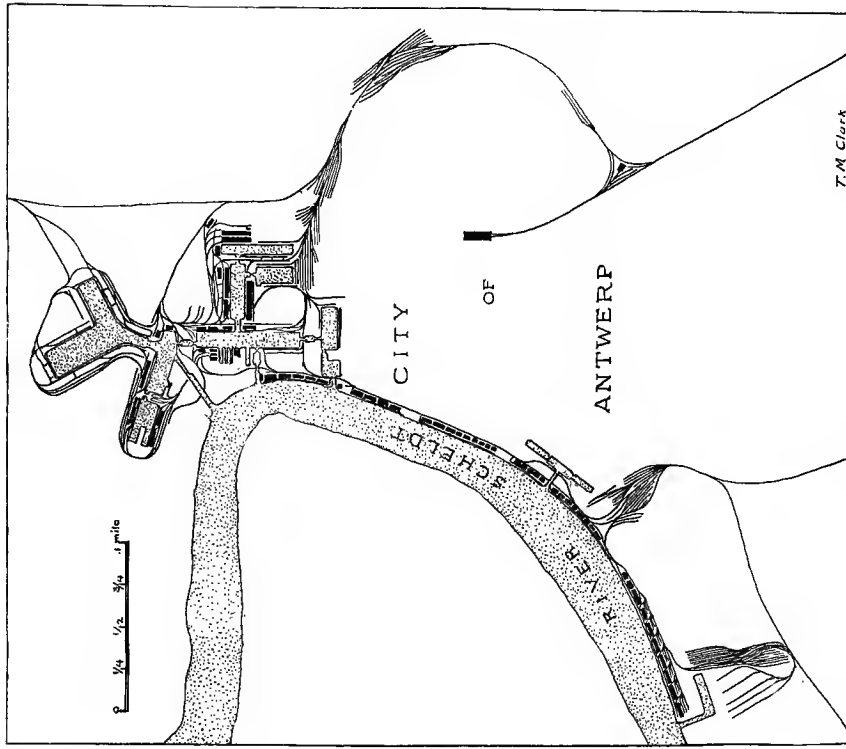


FIGURE 56. Harbor Extension at Antwerp along the Scheldt, and the New Basins. Present condition.

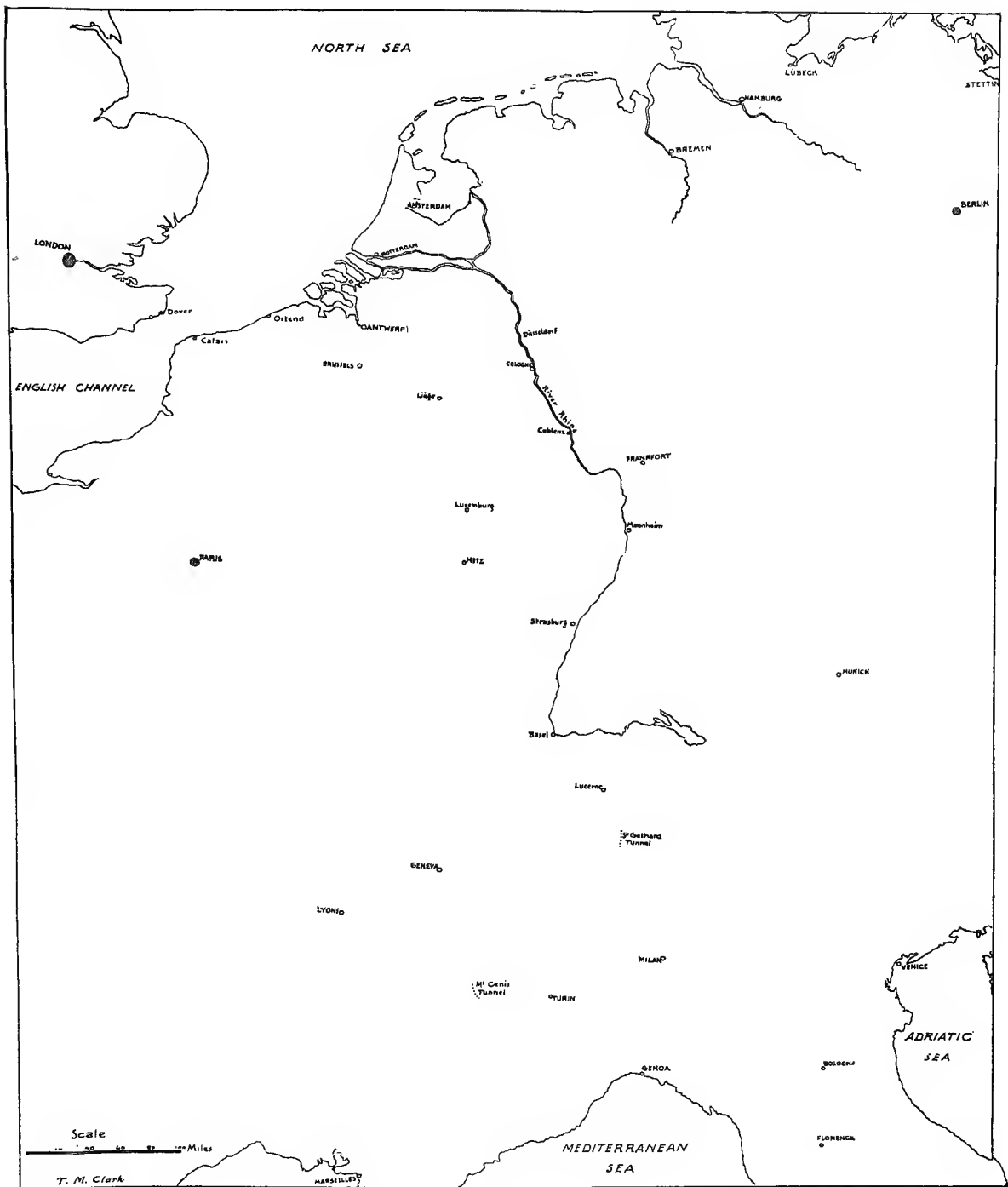


FIGURE 57. Map of Central Europe.

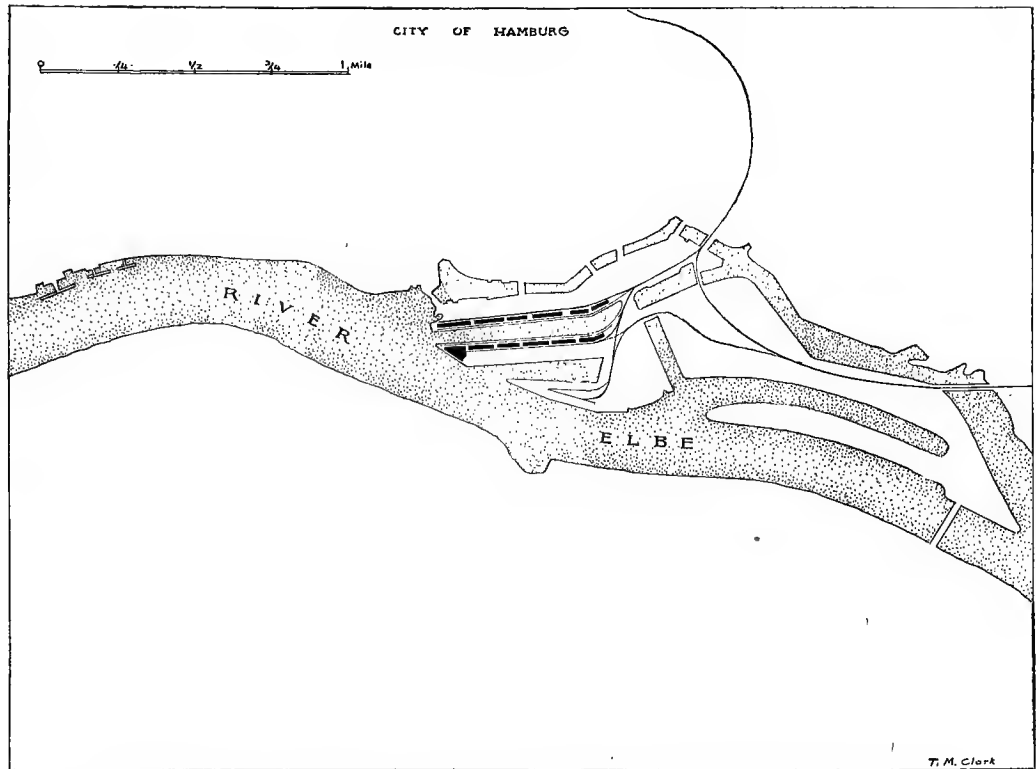


FIGURE 58. Plan of Site of New Harbor of Hamburg. Before Improvement.

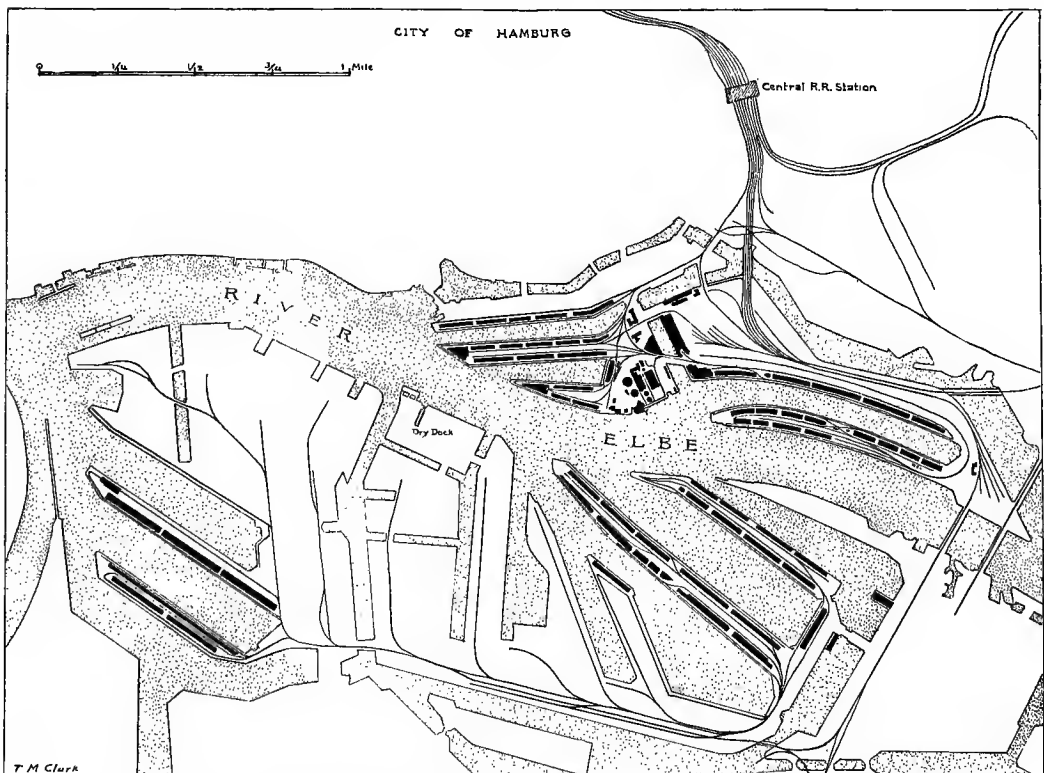


FIGURE 59. Plan of New Harbor of Hamburg. Present Condition.

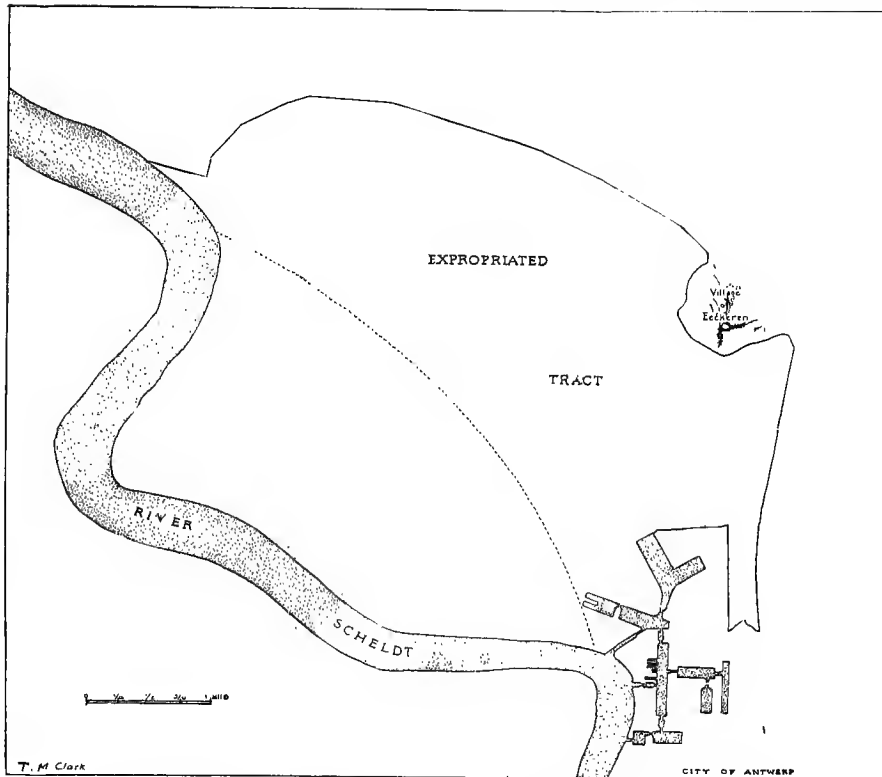


FIGURE 60. Plan of Land taken for New Harbor of Antwerp.

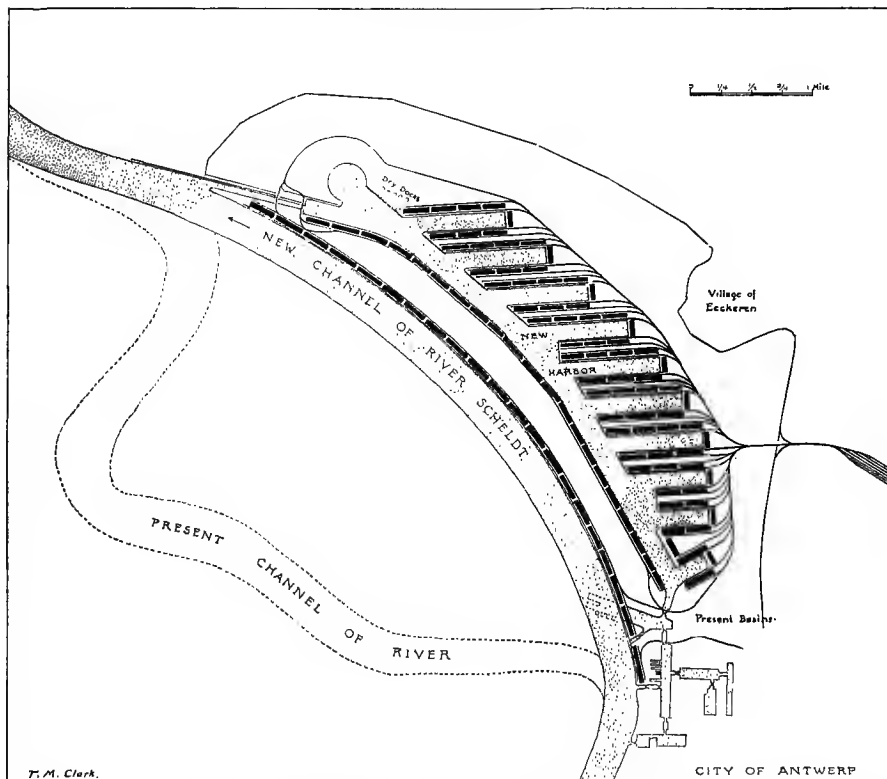


FIGURE 61. New Harbor of Antwerp, now under construction. (From Official Plan.)

entering the city. These improvements were well-timed. Before they were completed, two out of the three railroads connected with the port were loading, on an average, five thousand freight cars a day.

Meanwhile, Hamburg, fully aware of its danger, and of the movements of its rival, had not been idle. It would not have been difficult to extend its quays, or to build basins, as was done at Antwerp, but the merchants reasoned that railroads parallel with a very long water front, where tracks must be multiplied to give trains room to pass, or bent around a system of basins, are operated at a disadvantage, and that the best and simplest arrangement in the end, although perhaps the most expensive at the outset, was to form a cluster of long piers, projecting into the water, past the head of which as many main tracks could be run as might be required, each pier having such tracks as it needed for its own use, together with the necessary warehouses for receiving goods awaiting shipment or sale. As the Elbe is far too narrow to allow such piers to project into the stream, a tract of some twelve hundred acres of cheap, marshy land on the other side of the river (Fig. 58) was purchased, docks were excavated, the old quays remodelled and extended, and a new harbor formed, containing eleven piers, averaging about two thirds of a mile in length (Fig. 59), with docks between, so as to bring railroads and ships together with the least possible hindrance or interference. One hundred and eighteen warehouses were built on the piers, and tracks laid, all connecting with what was then the only railway entering the city, and connected with each other, so that any train or car could, without delay or interference with others, be placed alongside a steamer or warehouse at any part of any pier; while stationary and travelling cranes, both steam and electric, were provided for loading and unloading ships and cars quickly and economically. On these works the city of Hamburg spent, in eighteen years, \$49,600,000. Never was money better invested. The economy and efficiency of the system of transfer between land and water transportation attracted so much business that, instead of the one railroad which entered the city when operations began, there were six before they were completed, all connecting with the new docks, and two more have recently secured locations; while traffic by water has increased so rapidly that the city, from the fifth in the world in commercial importance, ranking after London, Liverpool, Glasgow and New York, is now by far the first, its commerce, in 1904, exceeding by about one fourth that of London itself; while its population, in twenty-two years, nearly tripled, rising from about 275,000 in 1882, when the dock scheme was adopted, to 772,852 by the census of 1904.\*

While the Hamburg works were in progress, and before the new system had been tested by experience, Antwerp, wishing to keep up with its rival, but doubting the value of the new plan, built, at great expense, three new basins, moving the city fortifications outward nearly a mile to make room for them; but the demonstration of the enormous advantage of the "perpendicular

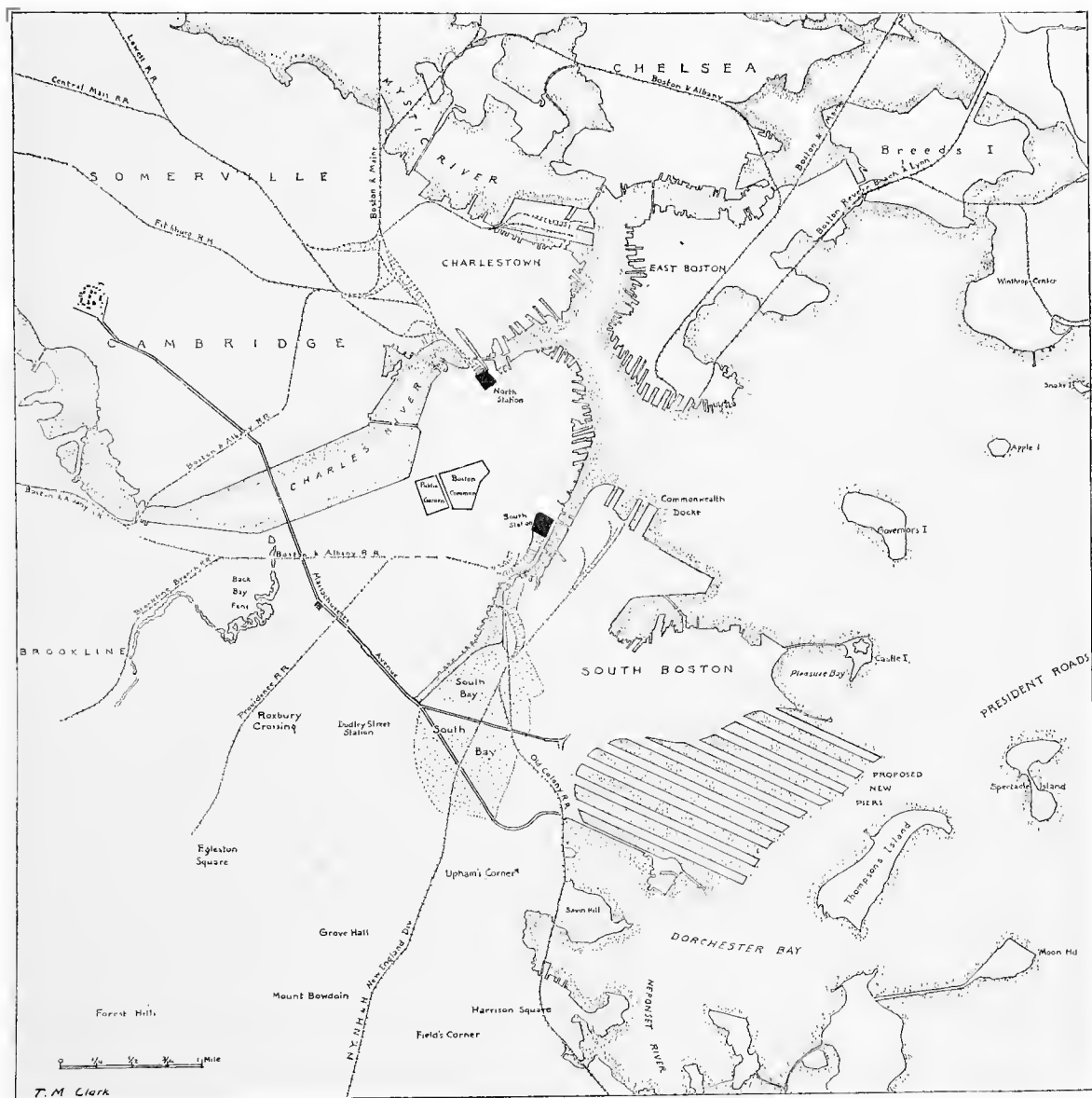
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\* To appreciate the energy and public spirit displayed by the people of Hamburg in the remodelling of their harbor it must be remembered that this little city, then of only 275,000 inhabitants, planned and carried out the whole work itself, practically without assistance; for, although the German Imperial Government paid to Hamburg, while the works were in progress, forty million marks, or less than ten million dollars, this was not pretended to be a contribution toward the cost of the docks, but was paid as compensation for the abandonment of the freedom from customs duties, which, until that time, the whole territory of Hamburg had enjoyed. Although free port privileges were reserved to the new docks, with burdensome conditions, all the inhabited portion of Hamburg and its suburbs passed under the German tariff system, and the citizens thenceforth, instead of importing goods and raw materials free, were obliged to pay the heavy German duties. Supposing the average population since Oct. 15, 1888, when the change went into effect, to have been 500,000, and each inhabitant to consume annually twenty-five dollars' worth of dutiable goods, on which the German duties would average not less than 25 per cent, the citizens have in eighteen years repaid the German Government its outlay six times over; and now, with a population of 800,000, are paying back the whole amount every two years. That is all that the Imperial Government has ever done for Hamburg, and its citizens would be nearly sixty million dollars in pocket if it had never done anything for them.

pier" plan, which followed the completion of the new Hamburg harbor, showed that if Antwerp wished to keep its commerce it must remodel its port without delay on the same system. To this end, about a year ago, an appropriation of fifty-three million dollars was made by the Belgian Government, and eight thousand acres of suburban land taken (Fig. 60), in which a new harbor is now in process of construction (Fig. 61), with perpendicular piers, tracks, and warehouses, substantially similar to those at Hamburg, although the piers are more regularly laid out and considerably longer, experience at Hamburg having shown this to be desirable. The scheme also involves changing the course of the river, to make access to the new harbor safer and more direct, and interposing locks to counteract the effect of the tides, which rise at Antwerp about fourteen feet. All these works will occupy less than half the area taken, but it is the intention of the government to lay out the remainder in city lots, and sell it, in the expectation that the population of the district will increase so rapidly through the commercial development due to the new dock system, that the profit on the sale of the neighboring land will repay the whole cost of the undertaking.

The nature of the combination of docks and railways demanded by modern intensive commerce is already shown so clearly by these examples that England, afraid of losing her commercial rank, is hastening to follow them. Liverpool is said to be engaged on harbor improvements which will cost sixty million dollars, and London has very recently appointed a commission to consider the radical remodelling of its entire dock system. This country should not be left behind. Philadelphia, not long ago, made some official study of the subject, but the conditions in Philadelphia and New York are far less favorable than those existing in Boston for harbor development in the modern sense. It has been shown that an indispensable requisite of a port to be used with advantage by large modern steamers is that the piers shall be long enough for entire freight trains to be moved about on them. Three quarters of a mile is considered necessary for this purpose at Antwerp, and our longer and heavier freight trains would require more, rather than less, than this; yet a pier of this length would reach entirely across the Hudson River, the East River or the Delaware. Anything like a modern pier system of the first class is, therefore, impracticable for New York, Philadelphia, Brooklyn, Jersey City or Hoboken, while it can easily be formed, and under the most advantageous circumstances, in Boston. The chart of Boston shows (Fig. 62), at a short distance from the South Terminal, a sheet of water, containing some fifteen hundred acres, called the Old Harbor, bounded on the west by the Strandway, on the north by South Boston, and on the south by the peninsula of the Calf Pasture, and sheltered to the east by Thompson's Island. The water in this Old Harbor averages about six feet in depth at low tide, except at its eastern edge, where there is a channel about fifteen hundred feet wide and from sixteen to forty-seven feet deep at low tide, kept clear by the current of the Neponset River, and opening almost in a straight line into President Roads, the principal entrance into the inner harbor. The main tracks of the Old Colony Railroad now run for some distance along the shore of the Old Harbor. It is proposed to fill along the shore to a regular curve, about five hundred feet outside the Strandway, so as to give room for a sufficient number of main tracks, and to build out from this curved shore line nine piers (Fig. 63), averaging about a mile in length, extending to the present deep-water channel. These piers are three hundred feet wide, and the docks between are four hundred and fifty feet wide. The piers would be built by the modern method of driving concrete piles around the edges, and filling the space with sand and other material dredged by pumping from the docks between and from the shallower portions of the main channel, excavating all to a uniform depth of forty feet. On each pier would be built two rows of warehouses (Fig. 64), with four railroad tracks, all frequently connected, with elevated tracks over, on which to run travelling steam or electric cranes. The warehouses would be uniformly fifty feet wide, averaging about four hundred feet long, mostly four stories high, and all absolutely fireproof, of brick and concrete, with wire-glass windows in





**FIGURE 63. Plan of Proposed New Docks, Showing their Relation to the Surrounding Portions of Boston.**





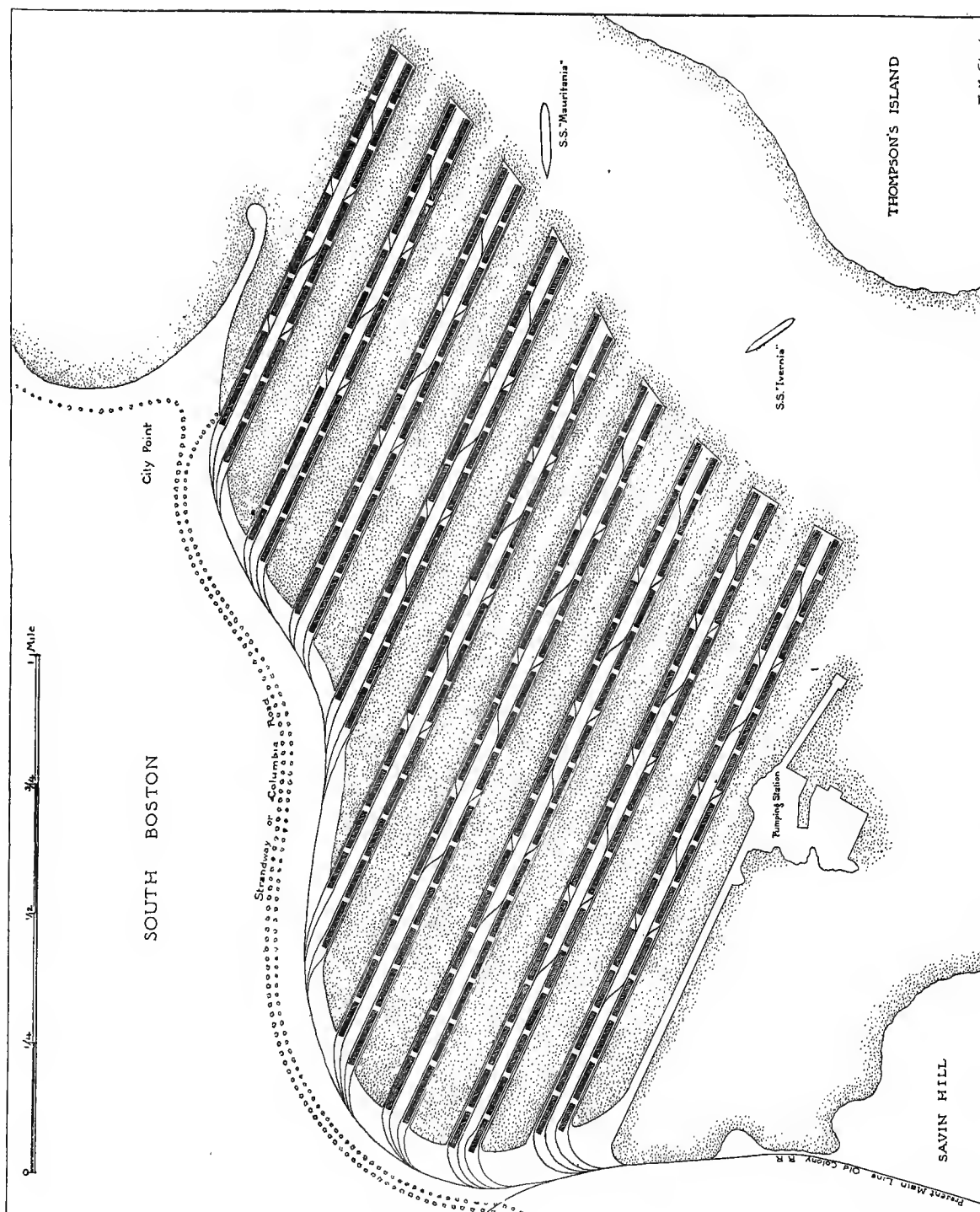


FIGURE 64. Plan of Proposed New Docks, Showing Railways and Warehouses.

metal frames. The Old Colony tracks already connect with all the railroads entering the South Terminal, and by a single short bridge across the Charles River, from Union Market Station on the Fitchburg division of the Boston & Maine to Faneuil Station on the Albany road, all the remaining railroads entering the city could also be connected with the new docks, so that a consignment of cotton, grain, iron or manufactured goods from any railroad station in the United States, Canada or Mexico could be placed, without teaming or transfer of any kind, alongside any steamer for shipment or any warehouse for storage, at any part of any pier; while, by means of the travelling overhead cranes, single packages could be transferred directly between any ships, cars or warehouses at any part of the dock system. There would also be ample space for the circulation of wagons, for local use, between the tracks in the middle of the piers, within easy reach of the electric cranes, while passengers from the regular liners would have rooms fitted up for their accommodation on the flat roofs of the warehouses, where their baggage could be examined, and from which, by means of bridges and elevators, or stairs, they and their effects could be transferred directly to carriages or to railroad cars for any destination, without coming into contact with the freight traffic below. The width of the docks between the piers is sufficient to allow a row of from seven to ten steamers of the largest size to lie at each side of every pier, leaving ample space between for other steamers of the same sort to go in or out, and pass each other, even with tug-boats alongside, although the docks and the main channel are so wide and convenient that steamers of any size could easily reach and leave their berths under their own steam, without requiring the services of tugs.

It will be observed that the harbor proposed, while possessing all the advantages of the new ports of Hamburg and Antwerp, has others of its own. Hamburg is separated from the ocean by ninety-three miles of such difficult river navigation that ships are required to take three pilots between the mouth of the Elbe and their docks; and the new harbor at Antwerp can be entered only through locks; while the new Boston docks almost adjoin the open sea; so that if the new port of Antwerp is to be, as the King of Belgium promises, the most convenient and best equipped in the world, that of Boston, when completed, will far surpass it in these respects.

But there is another element in the plan here proposed. The Belgian Government expects to repay the cost of its harbor improvements by creating a new commercial city in what is now a farming district, the middle of which is more than seven miles distant from the Antwerp Central railway station. Let us see what Boston has to offer as a means of reimbursing its outlay. Referring again to the chart (Fig. 62), we find a tract about two miles long, and averaging half a mile wide, mostly covered with water at high tide, and with a narrow dredged channel on its northern edge, situated in the very heart of the city, extending from the South Terminal to a point beyond Massachusetts Avenue in one direction and from Albany Street to Andrew Square in the other. This tract is known as the South Bay. It is only about a quarter of a mile from the proposed new docks, and the plan contemplates using the surplus material dredged from them for filling it, reserving the present channel, which there is no need of disturbing. By filling this submerged area and the flats around it to a proper grade, which can be done by direct pumping at a very small expense, some six hundred acres of land, bordering on one side on the new docks and surrounded on the other three sides by the busiest and most important sections of the city, would be brought into the market. Reserving one third for streets, there would still be left some four hundred acres, or more than seventeen million square feet, in the best possible location for the offices of shipping agents, brokers, commission merchants, railroad and steamship companies, banks, tourist agencies and insurance companies, as well as for hotels and general wholesale business. No other land suitable for such purposes can now be bought in Boston for less than twenty dollars a square foot. Supposing this tract to be sold at an average price of five dollars a foot it would bring in eighty-five million dollars, or more than double the estimated cost of the

whole dock system, including the two hundred and twenty-three warehouses contemplated in the plan; while the annual rental from these alone, at twenty-five cents per square foot per year, which is about one third the usual charge in Boston, would be more than four million dollars, or enough to pay ten per cent interest on the cost of the whole system, independent of the profit on the South Bay improvement, and without including any income from the docks and piers themselves, the use of which it is intended to make absolutely free to all comers, under proper regulations. That the warehouses would easily bring in a much larger income may be inferred from the experience of Hamburg. There the average rent paid is about a dollar a year per square foot of floor space for storage alone, a separate charge being made for hoisting and lowering. There are now, on the new piers at Hamburg, one hundred and eighteen of these warehouses, none of them of fireproof construction; yet, at a rental four times as high as is proposed for the fireproof Boston warehouses, the demand for space in them far exceeds their capacity.

It is probable that certain current misapprehensions will be quoted against the plan above briefly described. The new harbor of Hamburg, it will be objected, is free of duties, and thus presents advantages for commerce which cannot be rivalled here. The truth is, however, that, previous to the construction of the new docks, the whole territory of Hamburg was, and had been for centuries, free of customs duties. After the formation of the new German Empire the Imperial Government endeavored persistently to abolish this privilege, and the agreement which went into effect in 1888, by which only the new docks were left free, all the remaining territory of Hamburg coming under the Imperial customs regulations, was a compromise, involving a serious sacrifice of the city's interests. Moreover, the conditions of the agreement, under which the city is obliged to maintain seventeen hundred guards on the new docks to prevent smuggling, paying for their wages more than a million dollars a year out of the dock revenues, while the German custom-house officers wait outside the gates to levy the Imperial duties, make the free harbor privilege of very doubtful value, nothing, apparently, being gained which would not be far more efficiently and economically gained by the American bonded warehouse system.

Another mistaken assertion, which is often made to discredit Boston as a commercial city, is that it occupies an "outlying position," and that it costs so much more to transport goods by land than it does by water that the advantage which it enjoys of being half a day's sail nearer Europe than New York is more than counterbalanced by the extra expense of getting freight to it by land. The answer to this is that, by agreement of the railroads, freight rates from all principal points are, and have been for years, exactly the same to Boston as to New York, and nothing but cheaper and more convenient transfer of freight from cars to steamers is needed to secure the great advantage which these rates offer.\*

It will be urged, as it has often been urged before, that New York enjoys such an advantage in cheap transportation from the West by the Erie Canal and the Hudson River that Boston cannot hope to compete with it in attracting commerce. Fifteen years ago there would have been some foundation for this notion, but the increased efficiency of railroad transportation has changed the conditions. At all seasons of the year, even such bulky goods as grain and flour are now carried from Buffalo to New York more cheaply by rail than they can be carried by canal and river; and, as a matter of fact, not a pound of export freight has for some years been

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\* It has been suggested that, under the new rate law, railroad charges might be fixed on a mileage basis, under which freights from the West would be somewhat higher to Boston than to New York. The rate law, as passed, does not, however, require a mileage basis for rates, and it is understood that the Interstate Commerce Commission does not intend to disturb the present conditions so far as Boston and New York are concerned; but Boston's true policy is to fortify itself against all contingencies by every possible reduction or abolition of local expenses, direct and indirect, which often amount to more than the cost of transportation to Liverpool, and by securing, as it may easily do, a speed, economy and convenience of transfer of freight which no other port can rival.

brought to New York through the Erie Canal. Whether the projected improvements in the canal will revive its competition with the railroads remains to be seen, but it cannot now, in any case, seriously interfere with the supremacy of the railroads; and, as the point of transfer between American railroad transportation and ocean commerce, Boston, with adequate port equipment, would present advantages incomparably superior to any which New York could offer.

It will be said that New York is a larger city than Boston, and furnishes a better market for imported goods, and therefore attracts commerce. To a certain extent this is true, but it was commerce, helped by the advantage that the Erie Canal gave her over her rivals, which made New York a great city. Now, through the final ascendancy of the railroads over the canal, that advantage has passed to Boston, and the people of Boston have only to avail themselves of it, by proper means, to secure for their city commercial preponderance in America, as Hamburg, by such means, has secured for itself commercial preponderance in Europe.

It will, perhaps, be claimed that other good harbors, such, for example, as that of New London, may be so developed as to become formidable competitors with Boston for ocean commerce; but the costly failures at Milford Haven, Montauk Point and many other places, show that a good harbor alone will not attract commerce, unless it is closely connected with a rich and populous city, ready to receive imported goods of all kinds, and to furnish at short notice a great variety of labor and supplies; and Boston, which is the second centre of population in America,\* and the principal American market for many staple goods, needs nothing but modern port facilities to recover the maritime preëminence which it once held. Even now it is a favorite importing point, and many Atlantic liners willingly add nearly a thousand miles to the length of their trip for the sake of landing their freight in Boston, proceeding thence, for their return cargo, to Philadelphia or Baltimore, where they have the advantage, not merely of the differentials established by the railroads in favor of those ports, but of better and cheaper facilities for transfer than are now available in Boston; and nothing is needed but transfer made by such a plan as that outlined above, not only as cheap as at Philadelphia and Baltimore, but quicker, cheaper and more efficient than anywhere else in the world, to make the port of Boston the scene of unexampled commercial activity. That such a development will come some time cannot be doubted, for the conditions make it practically inevitable, but the present opportunity for bringing it about immediately, and without any expense, will soon pass away.†

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\* The freight rates from Buffalo to New York by canal and river are now about one half those charged by rail, yet all through freight comes by rail, because delay, interest and insurance, lighterage and elevator charges, incidental to the canal route, more than make up the difference. It is claimed that, on the completion of the barge canal, rates from Buffalo can be reduced one half. Even if this should be so, the railroads would only have to reduce their charges by less than one fourth to retain the same superiority that they have now; and, with electric traction, which offers greater advantages in transporting freight than passengers, this should be quite practicable. It may be observed that the Erie Canal now really represents a huge subsidy paid by the State of New York to maintain the commerce of New York City. When it was first opened, freight charges from Buffalo to New York, including tolls, were ten dollars a ton. Now, they are fifty-four cents a ton, the tolls being abolished, and the State paying for the maintenance and operation of the canal, with interest on its cost, out of its own pocket. When the widening is finished, the canal will have cost about one hundred fifty million dollars. Interest on this sum, with expenses of operation and maintenance, will not be much less than ten million dollars a year, this being the contribution that the taxpayers of the State make toward keeping down freight charges. If modern facilities for loading and unloading such craft were provided in Boston, in connection with the new docks, it might very probably be cheaper to bring the tows of barges from Buffalo through Long Island Sound and one of the new Massachusetts canals into Boston Harbor than to pay elevator and lighterage charges in New York; and the New York taxpayers may find themselves spending ten million dollars a year to build up the commerce of Boston.

† The question may be asked why East Boston, already an important ocean terminal, would not afford the best site for such a port as is described in the text. The answer is, that piers of the necessary length could only be laid out on the east side of East Boston, where the water is very shallow for several miles out, and they would have to be reached by a branch from the main inner channel, inside of Governor's Island.

### Conclusion.

This report is respectfully submitted to the Boston Society of Architects by its present committee :—

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WILLIAM ATKINSON.

C. H. BLACKALL.

JOSEPH E. CHANDLER.

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C. HOWARD WALKER.

IRVING T. GUILD,

*Secretary.*

BOSTON, Dec. 1, 1906.

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The inner channel is narrow and shallow, being only 27 feet deep, while the new Cunarders draw  $39\frac{1}{2}$  feet; and, with more angles added, the access to the piers would be difficult, and even dangerous, for large steamers, as compared with the straight line from President Roads into the deep and wide natural channel, inside of Thompson's Island, which the present plan proposes to utilize. Moreover, at East Boston there is no South Bay to fill up, and sell for enough to pay the cost of the whole undertaking, probably several times over; and there is nothing like the close proximity to the entire business section, the great terminals and the trolley lines, which forms one of the unrivalled advantages of the old harbor site. The railroad approach to East Boston is also less direct, and it would be difficult there to secure that absolute equality of access for all roads, existing or to be built, which is essential to the development of the port and of the city.





















